

SYSTEM:OS - DIALOG OneSearch

File 155:MEDLINE(R) 1966-1996/June W4

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*File 155: Type HELP NEWS 155 for 1996 reload information

*** MEDLINE updates delayed. See HELP DELAY 155.

File 55:BIOSIS PREVIEWS(R) 1985-1996/Apr W4

(c) 1996 BIOSIS

File 34:SciSearch(R) 1988-1996/Apr W3

(c) 1996 Inst for Sci Info

File 35:Dissertation Abstracts Online 1861-1996/May

(c) 1996 UMI

File 73:EMBASE 1974-1996/Iss 16

(c) 1996 Elsevier Science B.V.

File 76:Life Sciences Collection 1982-1996/Mar

(c) 1996 Cambridge Sci Abs

File 351:DERWENT WPI 1981-1996/UD=9618;UA=9614;UM=9606

(c)1996 Derwent Info Ltd

File 358:Current Biotech Abs 1983-1996/May

(c)1996 Royal Soc Chem & the DECHEMA

Set Items Description

--- ---

?s hepatitis(w)b or HBV

47 HEPATITUS

2003475 B

21 HEPATITUS(W)B

21603 HBV

S1 21623 HEPATITUS(W)B OR HBV

?s s1 and genom?

21623 S1

287197 GENOM?

S2 2603 S1 AND GENOM?

?s s2 and sequence

2603 S2

1119266 SEQUENCE

S3 1078 S2 AND SEQUENCE

?s s3 and oligo?

>>>File 55 processing for OLIGO? stopped at OLIGOTROPHIZATION

1078 S3

343415 OLIGO?

S4 100 S3 AND OLIGO?

?s s4 and (treat? or therap? or inhibit?)

Processing

Processing

Processing

100 S4

4225459 TREAT?

3949793 THERAP?

2381699 INHIBIT?

S5 22 S4 AND (TREAT? OR THERAP? OR INHIBIT?)

?rd

>>>Duplicate detection is not supported for File 351.

>>>Records from unsupported files will be retained in the RD set.
...completed examining records
S6 18 RD (unique items)
?t s6/3/1-18

6/3/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 1996 Knight-Ridder Info. All rts. reserv.

09034150 94349150
Inhibition of hepatitis B viral gene expression by antisense
phosphorothioate *oligonucleotides*]
Yao ZQ; Zhou YX; Wang AL
Department of Infectious Disease, Tangdu Hospital Fourth Military Medical
University, Xi'an.
Chung Hua I Hsueh Tsa Chih (CHINA) Feb 1994, 74 (2) p74-6, 125, ISSN
0376-2491 Journal Code: CDG
Languages: CHINESE Summary Languages: ENGLISH *ILL*
Document type: JOURNAL ARTICLE English Abstract

6/3/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 1996 Knight-Ridder Info. All rts. reserv.

08950931 94265931
Inhibition of hepatitis B virus surface gene expression by antisense
oligodeoxynucleotides in a human hepatoma cell line.
Reinis M; Reinisova M; Korec E; Hlozanek I
Institute of Molecular Genetics, Academy of Sciences of Czech Republic,
Praha.
Folia Biol (Praha) (CZECH REPUBLIC) 1993, 39 (5) p262-9, ISSN
0015-5500 Journal Code: EYH
Languages: ENGLISH
Document type: JOURNAL ARTICLE *ILL*

6/3/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 1996 Knight-Ridder Info. All rts. reserv.

08652428 93362428
Demonstration of sugar moiety on the surface of hepatitis C virions
recovered from the circulation of infected humans.
Sato K; Okamoto H; Aihara S; Hoshi Y; Tanaka T; Mishiro S
Japanese Red Cross Blood Center, Saitama.
Virology (UNITED STATES) Sep 1993, 196 (1) p354-7, ISSN 0042-6822
Journal Code: XEA
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 1996 Knight-Ridder Info. All rts. reserv.

08352421 93062421

Determination of the minimal length of preS1 epitope recognized by a monoclonal antibody which *inhibits* attachment of hepatitis B virus to hepatocytes.

Sominskaya I; Pushko P; Dreilina D; Kozlovskaya T; Pumpen P

Hepatological Center, Latvian Medical Academy, Riga.

Med Microbiol Immunol (Berl) (GERMANY) 1992, 181 (4) p215-26, ISSN 0300-8584 Journal Code: M58

Languages: ENGLISH

Document type: JOURNAL ARTICLE

6/3/5 (Item 5 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

(c) format only 1996 Knight-Ridder Info. All rts. reserv.

08349700 93059700

Repression of liver-specific hepatitis B virus enhancer 2 activity by adenovirus E1A proteins.

Chen ST; Su H; Yee JK

Department of Pediatrics, University of California, San Diego, La Jolla 92093-0634.

J Virol (UNITED STATES) Dec 1992, 66 (12) p7452-60, ISSN 0022-538X

Journal Code: KCV

Contract/Grant No.: AI29485, AI, NIAID

Languages: ENGLISH

Document type: JOURNAL ARTICLE

6/3/6 (Item 6 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

(c) format only 1996 Knight-Ridder Info. All rts. reserv.

08210875 92348875

HBe antibody unrelated to 'e minus' hepatitis B virus variant infection in patients with chronic type D hepatitis.

Raimondo G; Rodino G; Brancatelli S; Sardo MA; Campo S; Smedile V; Villari D; Pernice M; Longo G; Squadrito G

Dipartimento di Medicina Interna, Universita di Messina, Italy.

J Hepatol (NETHERLANDS) 1991, 13 Suppl 4 pS87-9, ISSN 0168-8278

Journal Code: IBS

Languages: ENGLISH

Document type: JOURNAL ARTICLE

6/3/7 (Item 7 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

(c) format only 1996 Knight-Ridder Info. All rts. reserv.

08125808 92263808

Hepatitis B virus *genomes* that cannot synthesize pre-S2 proteins occur frequently and as dominant virus populations in chronic carriers in Italy.

Santantonio T; Jung MC; Schneider R; Fernholz D; Milella M; Monno L; Pastore G; Pape GR; Will H

Max-Planck-Institut fur Biochemie, Martinsried/Munchen, FRG.

Virology (UNITED STATES) Jun 1992, 188 (2) p948-52, ISSN 0042-6822

Journal Code: XEA

Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/8 (Item 8 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 1996 Knight-Ridder Info. All rts. reserv.

08088486 92226486
Selection for a pre-C stop codon mutation in a hepatitis B virus variant with a pre-C initiation codon mutation during interferon *treatment*.
Santantonio T; Jung MC; Schneider R; Pastore G; Pape GR; Will H
Max-Planck-Institut fur Biochemie, Martinsried/Munchen, Federal Republic of Germany.
J Hepatol (NETHERLANDS) Nov 1991, 13 (3) p368-71, ISSN 0168-8278
Journal Code: IBS
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/9 (Item 9 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 1996 Knight-Ridder Info. All rts. reserv.

07607055 91126055
The role of envelope proteins in hepatitis B virus assembly.
Bruss V; Ganem D
Department of Microbiology, University of California, San Francisco 94143.
Proc Natl Acad Sci U S A (UNITED STATES) Feb 1 1991, 88 (3) p1059-63, ISSN 0027-8424 Journal Code: PV3
Languages: ENGLISH
Document type: JOURNAL ARTICLE

6/3/10 (Item 10 from file: 155)
DIALOG(R)File 155:MEDLINE(R)
(c) format only 1996 Knight-Ridder Info. All rts. reserv.

07589400 91108400
Antisense *oligodeoxyribonucleotides* *inhibit* the expression of the gene for hepatitis B virus surface antigen.
Goodarzi G; Gross SC; Tewari A; Watabe K
Department of Medical Microbiology/Immunology, Southern Illinois University School of Medicine, Springfield 62708.
J Gen Virol (ENGLAND) Dec 1990, 71 (Pt 12) p3021-5, ISSN 0022-1317
Journal Code: I9B
Languages: ENGLISH
Document type: JOURNAL ARTICLE

QR1.56

6/3/11 (Item 1 from file: 55)
DIALOG(R)File 55:BIOSIS PREVIEWS(R)
(c) 1996 BIOSIS. All rts. reserv.

7187194 BIOSIS Number: 88109939
IN-VITRO AMPLIFICATION OF HEPATITIS B VIRUS SEQUENCES FROM LIVER TUMOR DNA AND FROM PARAFFIN WAX EMBEDDED TISSUES USING THE POLYMERASE CHAIN

REACTION

LO Y-M; MEHAL W Z; FLEMING K A
UNIV. OXFORD, NUFFIELD PATHOL., JOHN RADCLIFFE HOSP., OXFORD OX3 9DU,
ENGLAND.
J CLIN PATHOL (LOND) 42 (8). 1989. 840-846. CODEN: JCPAA
Full Journal Title: Journal of Clinical Pathology (London)
Language: ENGLISH

6/3/12 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R)
(c) 1996 Inst for Sci Info. All rts. reserv.

14338782 Genuine Article#: TE636 No. References: 22
Title: ANTISENSE *OLIGONUCLEOTIDES* ARE EFFECTIVE *INHIBITORS* OF
HEPATITIS-B VIRUS-REPLICATION IN-VITRO
Author(s): KORBA BE; GERIN JL
Corporate Source: GEORGETOWN UNIV,DIV MOLEC VIROL & IMMUNOL,5640 FISHERS
LANE/ROCKVILLE//MD/20852
Journal: ANTIVIRAL RESEARCH, 1995, V28, N3 (NOV), P225-242
ISSN: 0166-3542
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

6/3/13 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R)
(c) 1996 Inst for Sci Info. All rts. reserv.

13934118 Genuine Article#: RB419 No. References: 28
Title: ANTI-*HBV* NEONATAL IMMUNIZATION WITH RECOMBINANT VACCINE .2.
MOLECULAR-BASIS OF THE IMPAIRED ALLOREACTIVITY
Author(s): MARTINETTI M; CUCCIA M; DAIELLI C; AMBROSELLI F; GATTI C;
PIZZOCHERO C; BELLONI C; ORSOLINI P; SALVANESCHI L
Corporate Source: POLICLIN SAN MATTEO,IRCCS,IMMUNOHEMATOL & TRANSFUS
SERV,HLA LAB/I-27100 PAVIA//ITALY//; UNIV PAVIA,DEPT GENET &
MICROBIOL/I-27100 PAVIA//ITALY//; POLICLIN SAN MATTEO,IRCCS,DIV NEONATAL
INTENS CARE/I-27100 PAVIA//ITALY//; POLICLIN SAN MATTEO,IRCCS,DEPT
INFECT DIS/I-27100 PAVIA//ITALY/
Journal: VACCINE, 1995, V13, N6 (APR), P555-560
ISSN: 0264-410X
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

6/3/14 (Item 3 from file: 34)
DIALOG(R)File 34:SciSearch(R)
(c) 1996 Inst for Sci Info. All rts. reserv.

11930221 Genuine Article#: JX865 No. References: 135
Title: ON THE EARLY EMERGENCE OF REVERSE TRANSCRIPTION - THEORETICAL BASIS
AND EXPERIMENTAL-EVIDENCE
Author(s): LAZCANO A; VALVERDE V; HERNANDEZ G; GARIGLIO P; FOX GE; ORO J
Corporate Source: UNIV NACL AUTONOMA MEXICO,FAC CIENCIAS,DEPT BIOL,APARTADO
POSTAL 70407,CD UNIV/MEXICO CITY 04511/DF/MEXICO//; INST POLITECN
NACL,CINVESTAV,DEPT GENET & BIOL MOLEC/MEXICO CITY 07000/DF/MEXICO//;
UNIV HOUSTON,DEPT BIOCHEM & BIOPHYS SC/HOUSTON//TX/77204; CISEI,INST
NACL SALUD PUBL,DEPT GENET & PATOL EXPTL/CUERNAVACA/MORELOS/MEXICO/
Journal: JOURNAL OF MOLECULAR EVOLUTION, 1992, V35, N6 (DEC), P524-536
ISSN: 0022-2844

Language: ENGLISH Document Type: ARTICLE (Abstract Available)

6/3/15 (Item 4 from file: 34)
DIALOG(R)File 34:SciSearch(R)
(c) 1996 Inst for Sci Info. All rts. reserv.

11897124 Genuine Article#: JV015 No. References: 15
Title: RESISTANCE OF HEPATITIS DELTA VIRUS-REPLICATION TO INTERFERON-ALPHA
TREATMENT IN TRANSFECTED HUMAN-CELLS
Author(s): ILAN Y; KLEIN A; TAYLOR J; TURKASPA R
Corporate Source: HADASSAH UNIV HOSP,DIV MED,LIVER UNIT/IL-91120
JERUSALEM//ISRAEL/; HADASSAH UNIV HOSP,DIV MED,LIVER UNIT/IL-91120
JERUSALEM//ISRAEL/; FOX CHASE CANC CTR/PHILADELPHIA//PA/19111
Journal: JOURNAL OF INFECTIOUS DISEASES, 1992, V166, N5 (NOV), P1164-1166
ISSN: 0022-1899
Language: ENGLISH Document Type: NOTE (Abstract Available)

6/3/16 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE
(c) 1996 Elsevier Science B.V. All rts. reserv.

9276573 EMBASE No: 94213946
Rolling review - The pathogenesis, diagnosis and management of viral
hepatitis
Dusheiko G.M.
University Department of Medicine, Royal Free Hospital, School of
Medicine, Pond Street, Hampstead, London NW3 2QG United Kingdom
ALIMENT. PHARMACOL. THER. (United Kingdom) , 1994, 8/2 (229-253) CODEN:
APTHER ISSN: 0269-2813
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/17 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE
(c) 1996 Elsevier Science B.V. All rts. reserv.

8943548 EMBASE No: 93247334
Direct detection of *HBV* preC mutants in heterogeneous viral populations
by a modified DNA sequencing method
Manzin A.; Paolucci S.; Lampertico P.; Menzo S.; Rumi M.G.; Colombo M.;
Clementi M.
Institute of Microbiology, University of Ancona, I-60100 Ancona Italy
RES. VIROL. (France) , 1993, 144/4 (303-306) CODEN: RESVE ISSN:
0923-2516 ADONIS ORDER NUMBER: 0923251693000517
LANGUAGES: English SUMMARY LANGUAGES: English

6/3/18 (Item 1 from file: 351)
DIALOG(R)File 351:DERWENT WPI
(c)1996 Derwent Info Ltd. All rts. reserv.

010619843 WPI Acc No: 96-116796/12
XRAM Acc No: C96-036972
Single stranded *oligonucleotide*(s) for *inhibiting* replication of
hepatitis B virus - are anti-sense to portions of the epsilon
encapsidation *sequence* and modulate *HBV* function.

Patent Assignee: (GEOU) UNIV GEORGETOWN

Author (Inventor): GERIN J L; KORBA B E

Patent Family:

CC Number	Kind	Date	Week	
WO 9603152	A1	960208	9612	(Basic)

Application #?

Priority Data (CC No Date): US 281106 (940728)

Applications (CC,No,Date): WO 95US9143 (950728)

check palm/APS

* * * * *
 * W E L C O M E T O T H E *
 * U . S . P A T E N T T E X T F I L E *
 * * * * *

=> s hepatitis(w)b
 108 HEPATITUS
 990911 B

L1 39 HEPATITUS(W)B

=> s l1 or hbv?
 495 HBV?

L2 521 L1 OR HBV?

=> s l2 and oligo?

33866 OLIGO?

L3 198 L2 AND OLIGO?

=> s l2 and (oligo? or primer or probe)

33866 OLIGO?

16005 PRIMER

51914 PROBE

L4 253 L2 AND (OLIGO? OR PRIMER OR PROBE)

=> s l4 and (treat? or detect?)

473917 TREAT?

420714 DETECT?

L5 247 L4 AND (TREAT? OR DETECT?)

=> s l5 and kit

18202 KIT

L6 89 L5 AND KIT

DETD(191)

Amplification of **HBV** from Serum

DETD(DESC):

DETD(192)

DNA surrounded by proteins -- in this case viral hepatitis B DNA -- was efficiently **detected** after amplification by means of an appropriate buffer according to Example 10 for the amplification of purified DNA in the presence of serum. To this end, a serum having an **HBV** count of 1.5×10^7 HB viruses per microlitre (determination of count by means of the Abbott test No. 2022: **Kit** for viral **HBV**-DNA **detection** and quantification) after different dilution, was amplified in control serum with **HBV** specific primers MD122 and MD123. 10 μ l of serum were denatured in 50 μ l of reaction volume with L5 buffer and after addition of the PCR mix, amplified for 40 cycles. The products were analyzed on agarose gel. The results are summarized below in Table 12.

US PAT NO: 5,436,126 [IMAGE AVAILABLE] L6: 20 of 89
DATE ISSUED: Jul. 25, 1995
TITLE: Synthetic peptides specific for the **detection** of
antibodies to HCV, diagnosis of HCV infection and
prevention thereof as vaccines
INVENTOR: Chang Y. Wang, Great Neck, NY
ASSIGNEE: United Biomedical, Inc., Hauppauge, NY (U.S. corp.)
APPL-NO: 07/805,374
DATE FILED: Dec. 11, 1991
REL-US-DATA: Division of Ser. No. 558,799, Jul. 26, 1990, Pat. No.
5,106,726, which is a continuation-in-part of Ser. No.
481,348, Feb. 16, 1990, abandoned, and a
continuation-in-part of Ser. No. 510,153, Apr. 16, 1990,
abandoned.
INT-CL: [6] C12Q 1/70
US-CL-ISSUED: 435/5, 7.92, 968; 436/518, 533, 820
US-CL-CURRENT: 435/5, 7.92, 968; 436/518, 533, 820
SEARCH-FLD: 435/5, 7.92, 968; 436/533, 518, 820, 804
REF-CITED:

U.S. PATENT DOCUMENTS

4,356,164	10/1982	Tabor et al.	435/5
4,395,395	7/1983	Tabor et al.	424/89
4,464,474	8/1984	Coursaget et al.	436/513
4,542,016	9/1985	Trepo	424/86
4,554,101	11/1985	Hopp	530/324
4,673,634	6/1987	Seto et al.	435/5
4,702,909	10/1987	Villarejos et al.	424/89
4,735,896	4/1988	Wang et al.	435/5
4,777,245	10/1988	Foung et al.	530/388.3
4,833,071	5/1989	Wang et al.	435/5
4,871,659	10/1989	Pillot	435/5
4,879,212	7/1989	Wang et al.	435/5

FOREIGN PATENT DOCUMENTS

263761	4/1988	European Patent Office
293274	11/1988	European Patent Office
328403	1/1989	European Patent Office
318216	5/1989	European Patent Office
335135	10/1989	European Patent Office
363025	4/1990	European Patent Office
388232	9/1990	European Patent Office
609807	7/1988	France
90/00597	1/1990	World Intellectual Property Organization
WO90/022206	3/1990	World Intellectual Property Organization

OTHER PUBLICATIONS

MacCullum F.O., et al.; Lancet, 1:622 (1944).
Havens, W. P.: Proc Soc Exp Biol Med, 59:148 (1945).
Krugman, S. et al.: JAMA, 200:365 (1967).
Prince A. M.: Lancet, 2:241 (1974).
Alter H. J., et al: Lancet, 2:838 (1975).
Galbraith, R. M., et al: Lancet, 2:886 (1975).
Mosley, J. W., et al: N. Engl J Med, 296:75 (1977).
Dienstag, J. L.: Rush-Presbyterian-St. Luke's Med Bull, 15:104 (1976).
Asch, R. D., et al: N. Engl J Med 304:989 (1981).

Hollinger F. B., et al: Viral Hepatitis: 1981 International Symposium, Szmuness, W., Alter, H. J., Maynard, J. E., (eds), Philadelphia: Franklin Institute Press, p. 361 (1982).

Alter, H. J., et al.: JAMA, 246:630 (1981).

Stevens, C. E., et al: Ann Int. Med, 101:733 (1984).

Koziol, D. E., et al: Ann Int Med, 104:488 (1986).

Sugg, U., et al.: Transfusion, 28:386 (1988).

Choo Q-L., et al: Science, 244:359 (1989).

Kuo, G., et al: Science, 244:362 (1989).

Wang, C. Y.: Synthetic Peptides in Biotechnology, A. Mizrahi (3d), Adv in Biotechnological Processes, 10:131 (1988).

Wang, J. G., et al.: Proc Natl Acad Sci USA, 83:6159 (1986).

UBI-Olympus HIV-1 EIA Product Insert, Jun. 1, 1989. License No. 1079, approved by U.S. FDA.

Okamoto, H., et al.: Jpn. J. Exp. Med. 60(3):167-177 1990.

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Kubo, Y., et al: Nucleic Acid Res. 17:10367-10372 (1989).

Slide Presentation by Abbot Laboratories to American Association of Blood Banks (Oct. 1989).

Weiner et al., Lancet, 335: 1-3 (Jan. 1990).

McClelland et al., Lancet, pp. 36-37 (Jul. 1987).

Feinman et al., CMA Journal, 123: 181-184 (Aug. 1980).

T. H. Maugh II, Science, 210: 999-1000 (Nov. 1980).

Hantz et al., J. Med. Virol., 5:73-86 (1980).

Tabor et al., N. Engl. J. of Med., 303: 139-143 (1980).

Letters to Editor, Lancet, pp. 796-799 (Sep. 30, 1989).

Lynn et al., MMWR, 38:529-531 (Aug. 1989).

Polesky et al., Arch. Pathol. lab. Med., 113:232-235 (Mar. 1989).

G. Kolata, Science, 23:149-150 (Jul. 1986).

Troisi et al., Transfusion, 27:438-440 (1987).

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Arima T. et al., Gastroenterologia Jap., 25:2218-232 (1990).

Chou, P. Y. and Fasman, G. D., Biochemistry, 13:222-245 (1974).

ART-UNIT: 182

PRIM-EXMR: Esther M. Kepplinger

ASST-EXMR: Donna C. Wortman

LEGAL-REP: Morgan & Finnegan

ABSTRACT:

The present invention relates to a method for the **detection** in body fluids of antibodies to hepatitis C virus (HCV), also known as a non-A non-B hepatitis (NANBH) virus and to the diagnosis of NANBH by the use of a composition of synthetic peptides. Each of these peptides has an amino acid sequence corresponding to immunodominant regions of a fusion protein and a non-structural polypeptide of HCV, SOD/HCV C100 and a postulated HCV structural (core) protein. More specifically, the present invention is directed to the use of a group of synthetic peptides in a prescribed sequence or their analogues for the **detection** of antibodies to HCV in body fluids. The **detection** method includes an enzyme-linked immunosorbent assay (ELISA), and other forms of immunoassay procedures. The present invention also relates to a method for generating high titer antibodies to HCV in healthy mammals, including humans, by the use of compositions containing these synthetic peptides, analogues or mixtures thereof, in a free, conjugated or polymeric form as key components in

'synthetic vaccines for the prevention of non-A non-B hepatitis (NANBH).
14 Claims, 33 Drawing Figures

=>

US PAT NO: 5,200,314 [IMAGE AVAILABLE] L6: 42 of 89
 DATE ISSUED: Apr. 6, 1993
 TITLE: Polynucleotide capture assay employing in vitro
 amplification
 INVENTOR: Michael Urdea, Alamo, CA
 ASSIGNEE: Chiron Corporation, Emeryville, CA (U.S. corp.)
 APPL-NO: 07/497,938
 DATE FILED: Mar. 23, 1990
 INT-CL: [5] C12Q 1/68; C07H 15/12
 US-CL-ISSUED: 435/6, 210, 91; 536/24.3, 24.33; 935/77, 78; 436/94
 US-CL-CURRENT: 435/6, 91.2, 810; 436/94; 536/24.3, 24.33; 935/77, 78
 SEARCH-FLD: 435/6, 91, 810; 536/27, 5; 935/78, 77; 436/501, 94
 REF-CITED:

U.S. PATENT DOCUMENTS

4,486,539	12/1984	Ranki et al.	436/504
4,563,419	1/1986	Ranki et al.	435/6
4,683,195	7/1987	Mullis et al.	435/6
4,683,202	7/1987	Mullis et al.	
4,725,536	2/1988	Fritsch et al.	435/6
4,766,062	8/1988	Diamond et al.	435/6
4,766,064	8/1988	Williams et al.	435/6
4,795,701	1/1989	Vary	435/6
4,818,680	4/1989	Collins et al.	
4,868,105	9/1989	Urdea	
5,124,246	6/1992	Urdea et al.	435/6

FOREIGN PATENT DOCUMENTS

0192168	11/1986	European Patent Office
8403520	9/1984	World Intellectual Property Organization

OTHER PUBLICATIONS

European Patent Application No. 124221 (Nov. 7, 1984).
 European Patent Application No. 204510 (Dec. 10, 1986).
 ART-UNIT: 184
 PRIM-EXMR: Robert A. Wax
 ASST-EXMR: Miguel Escallon
 LEGAL-REP: Morrison & Foerster

ABSTRACT:

An analyte polynucleotide strand having an analyte sequence is
 detected within a sample containing polynucleotides by contacting the
 analyte polynucleotide with a capture **probe** under hybridization
 conditions, where the capture **probe** has a first binding partner
 specific for a solid-phase second binding partner. The resulting duplex
 is then immobilized by specific binding between the binding partners, and
 non-bound polynucleotides are separated from the bound species. The
 analyte polynucleotide is optionally displaced from the solid phase, then
 amplified by PCR. The PCR primers each have a polynucleotide region
 capable of hybridizing to a region of the analyte polynucleotide, and at
 least one of the primers further has an additional binding partner
 capable of binding a solid-phase binding partner. The amplified product
 is then separated from the reaction mixture by specific binding between
 the binding partners, and the amplified product is **detected**.

24 Claims, 2 Drawing Figures

US PAT NO: 4,921,788 [IMAGE AVAILABLE] L6: 68 of 89
 DATE ISSUED: May 1, 1990
 TITLE: Competitive nucleic acid immunoassay for the **detection**
 of analytes
 INVENTOR: Dale G. Deutsch, Stony Brook, NY
 ASSIGNEE: The Research Foundation of State University of New York,
 Albany, NY (U.S. corp.)
 APPL-NO: 07/180,543
 DATE FILED: Apr. 12, 1988
 INT-CL: [5] C12Q 1/68; G01N 33/535; G01N 33/545
 US-CL-ISSUED: 435/6, 7, 810; 436/531, 810; 935/77, 78; 422/61
 US-CL-CURRENT: 435/6; 422/61; 435/810, 975; 436/531, 810; 935/77, 78
 SEARCH-FLD: 435/6, 7, 810; 436/810, 531; 935/77, 78; 422/61
 REF-CITED:

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4,490,472	12/1984	Gottlieb	
4,562,159	12/1985	Shafritz	
4,563,417	1/1986	Albarella et al.	435/6
4,600,690	7/1986	Karmen et al.	
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BACKGROUND OF THE INVENTION

The United States Government has certain rights in this invention pursuant to NIH Biomedical Research Support Grant No. 431-E282N.

ART-UNIT: 181

PRIM-EXMR: Christine M. Nucker

ASST-EXMR: Karen Krupen

LEGAL-REP: Hoffmann & Baron

ABSTRACT:

A **kit** and a method for performing a competitive immunoassay utilize nucleic acid **oligonucleotide** chains for the **detection** of analytes, such as drugs, substances of abuse, hormones, poisons, organic compounds, peptides, proteins and the like. The **kit** includes a hapten-**oligonucleotide** complex, a complementary **oligonucleotide** chain for conjugating with the hapten-**oligonucleotide** complex, an antibody specific for the hapten and a fluorescent label such as ethidium bromide having an affinity for nucleic acid duplexes formed from the hapten-**oligonucleotide** complex and the complementary **oligonucleotide** chain. A means for **detecting** the presence of the fluorescent label such as a U.V. transilluminator, U.V. lightbox and fluorescence spectrophotometer is utilized to **detect** color intensity and fluorescence of the dye. The method can be performed in solution, or on a solid "dipstick" on which the reagents for the immunoassay have been immobilized.

26 Claims, 3 Drawing Figures

US PAT NO: 4,868,105 [IMAGE AVAILABLE] L6: 71 of 89
 DATE ISSUED: Sep. 19, 1989
 TITLE: Solution phase nucleic acid sandwich assay
 INVENTOR: Mickey Urdea, Alamo, CA
 Brian Warner, Redwood City, CA
 ASSIGNEE: Chiron Corporation, Emeryville, CA (U.S. corp.)
 APPL-NO: 06/807,624
 DATE FILED: Dec. 11, 1985
 INT-CL: [4] C12Q 1/68
 US-CL-ISSUED: 435/6, 810; 536/27; 935/77, 78
 US-CL-CURRENT: 435/6, 810; 536/24.3; 935/77, 78
 SEARCH-FLD: 435/6.810; 536/27; 935/78, 77
 REF-CITED:

U.S. PATENT DOCUMENTS

4,563,417	1/1986	Albarella	935/77
4,716,106	12/1987	Chiswell	435/6
4,731,325	3/1988	Palva et al.	435/6
4,751,177	6/1988	Stabinsky	435/6

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0128332	12/1984	European Patent Office	435/6
0139489	5/1985	European Patent Office	435/6
0831459	4/1983	World Intellectual Property Organization	
18301459	4/1983	World Intellectual Property Organization	
0843285	8/1984	World Intellectual Property Organization	
8403520	9/1984	World Intellectual Property Organization	
8606412	11/1986	World Intellectual Property Organization	435/6
215607	10/1985	United Kingdom	
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 Virtanen et al., The Lancet, pp. 381-383 (Feb. 19, 1983).
 Warner et al., DNA 3(5): 401-411 (1984).
 ART-UNIT: 182
 PRIM-EXMR: Robert J. Warden
 ASST-EXMR: Robert Benson

ABSTRACT:

Methods and compositions are provided for rapid ****detection**** of nucleic acid sequences. The method employs two reagent sets. The first set is a labelling set comprising: (1) a first nucleic acid sequence ****probe**** having an analyte complementary region and a first recognition sequence region and (2) a labelled sequence complementary to the first recognition sequence region. The second set is a capturing set comprising: (1) a second nucleic acid sequence ****probe**** having an analyte complementary region and a second recognition sequence region, (2) a specific binding pair member conjugated to a sequence complementary to the second recognition sequence, and (3) a separating means to which is bound a complementary specific binding pair member. The sample and probes are combined under annealing conditions, followed by addition of the other reagents, separation of the bound label from the supernatant and ****detection**** of the label in either phase.

21 Claims, 2 Drawing Figures

US PAT NO: 4,707,439 [IMAGE AVAILABLE] L6: 84 of 89
 DATE ISSUED: Nov. 17, 1987
 TITLE: Screening test for reverse-transcriptase containing virus
 such as non-A, non-B hepatitis, NANBH
 INVENTOR: Belinda P. Seto, Bethesda, MD
 William G. Coleman, Jr., Bethesda, MD
 Robert J. Gerety, Potomac, MD
 ASSIGNEE: The United States of America as represented by the
 Department of Health and Human Services, Washington, DC
 (U.S. govt.)
 APPL-NO: 06/665,400
 DATE FILED: Oct. 26, 1984
 INT-CL: [4] C12Q 1/00; C12Q 1/70
 US-CL-ISSUED: 435/5; 424/3; 435/4, 6; 436/820; 935/76
 US-CL-CURRENT: 435/5, 4, 6, 7.4; 436/820; 935/76
 SEARCH-FLD: 435/5, 7, 810, 4, 6; 436/820; 935/76
 REF-CITED:

U.S. PATENT DOCUMENTS

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4,464,474	8/1984	Coursdget	436/820 X
4,515,890	5/1985	Manderino	435/7
4,520,113	5/1985	Gallo	435/7 X
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 Chemical Abstracts I, 98: 105631h (1983).
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 Leong, J. C. et al., Biochim et Biophysica Acta, 782, 441-445 (Sep. 10, 1984).
 Gallo, R. C. et al., Science, 220, 865-867 (1983).
 ART-UNIT: 128
 PRIM-EXMR: Sidney Marantz
 LEGAL-REP: Holman & Stern

ABSTRACT:

The present invention discloses a screening test for **detecting** the presence of contaminating or infectious agents causing non-A, non-B hepatitis or AIDS in a blood donor setting. A **kit** for the **detection** of contaminating agents belonging to the group of retroviruses is also disclosed. Screening blood or blood related products so as to prevent spreading of infection or contamination due to retroviruses is now made possible by the present invention.

8 Claims, 1 Drawing Figures

=>

=> s 15 and phosphorothioate

1104 PHOSPHOROTHIOATE

L7 5 L5 AND PHOSPHOROTHIOATE

=> d 17 ti 1-6

5 ANSWERS ARE AVAILABLE. SPECIFIED ANSWER NUMBER EXCEEDS ANSWER SET
SIZE

ENTER ANSWER NUMBER OR RANGE (1):1-5

US PAT NO: 5,434,257 [IMAGE AVAILABLE]

L7: 1 of 5

TITLE: Binding compentent **oligomers** containing unsaturated
3',5' and 2',5' linkages

US PAT NO: 5,380,833 [IMAGE AVAILABLE]

L7: 2 of 5

TITLE: Polynucleotide reagents containing selectable cleavage
sites

US PAT NO: 5,118,605 [IMAGE AVAILABLE]

L7: 3 of 5

TITLE: Polynucleotide determination with selectable cleavage
sites

US PAT NO: 5,093,232 [IMAGE AVAILABLE]

L7: 4 of 5

TITLE: Nucleic acid probes

US PAT NO: 4,910,300 [IMAGE AVAILABLE]

L7: 5 of 5

TITLE: Method for making nucleic acid probes

=> d 17 fro 4,5

US PAT NO: 5,495,006 [IMAGE AVAILABLE] L11: 2 of 56
 DATE ISSUED: Feb. 27, 1996
 TITLE: Antiviral polynucleotide conjugates
 INVENTOR: Shane Climie, Toronto, Canada
 Michael Ma, Etobicoke, Canada
 ASSIGNEE: Allelix Biopharmaceuticals, Inc., Mississauga, Canada
 (foreign corp.)
 APPL-NO: 08/024,254
 DATE FILED: Mar. 1, 1993
 REL-US-DATA: Continuation-in-part of Ser. No. 952,404, Sep. 30, 1992,
 abandoned, which is a continuation-in-part of Ser. No.
 766,550, Sep. 27, 1991, abandoned.
 INT-CL: [6] C07H 21/04
 US-CL-ISSUED: 536/24.1, 23.1; 435/5
 US-CL-CURRENT: 536/24.1; 435/5; 536/23.1
 SEARCH-FLD: 536/23.1, 24.1, 24.5; 514/44; 435/5
 REF-CITED:

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ART-UNIT: 187
 PRIM-EXMR: W. Gary Jones
 ASST-EXMR: Scott Houtteman
 LEGAL-REP: Foley & Lardner

ABSTRACT:

The herpes simplex virus encodes ICP4, a DNA binding protein. ICP4-binding duplexed structures having significantly enhanced stability under physiological conditions are described. The structures are provided in the form of polynucleotide conjugates capable of adopting a duplexed structure, in which annealable polynucleotide strands are coupled covalently at one or both ends through a chemical linker which establishes a stabilizing bridge between strands. The present polynucleotide conjugates have therapeutic utility against viral infection as the polynucleotide strands thereof define a binding site for a viral regulatory protein, thereby inactivating the protein and preventing viral replication from occurring.

13 Claims, 17 Drawing Figures

US PAT NO: 5,434,257 [IMAGE AVAILABLE] L11: 9 of 56
DATE ISSUED: Jul. 18, 1995
TITLE: Binding compentent **oligomers** containing unsaturated
3',5' and 2',5' linkages
INVENTOR: Mark D. Matteucci, Burlingame, CA
Xiaodong Cao, Carlsbad, CA
ASSIGNEE: Gilead Sciences, Inc., Foster City, CA (U.S. corp.)
APPL-NO: 08/142,785
DATE FILED: Oct. 26, 1993
REL-US-DATA: Continuation-in-part of Ser. No. 892,902, Jun. 1, 1992.
INT-CL: [6] C07H 19/00; C07H 21/00
US-CL-ISSUED: 536/24.3, 23.1, 24.33, 24.5, 25.3, 25.1, 25.2
US-CL-CURRENT: 536/24.3, 23.1, 24.33, 24.5, 25.1, 25.2, 25.3
SEARCH-FLD: 536/22.1, 23.1, 24.3, 24.33, 24.5, 25.1, 25.2, 25.3;
514/43, 44; 424/9

REF-CITED:

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5,079,151	1/1992	Lampson et al.	435/91

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WO89/12060	12/1989	World Intellectual Property Organization	
WO90/15065	12/1990	World Intellectual Property Organization	C07H 21/00
WO91/14436	10/1991	World Intellectual Property Organization	
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 containing a fluorescent pyridopyrimidine deoxynucleoside," Nuc. Acids
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 Synthesis of a Cytosine-Containing Oligomer with Carbamate
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 Principle," Chem. Rev. 90:543-584 (1990).
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 Enzymic Degradation," TET LETT 28:3539-3542 (1987).
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 anthraquinone pseudonucleosides," Nuc Acids Res 19(11):3111-3114 (1991).
 ART-UNIT: 184
 PRIM-EXMR: Suzanne E. Ziska
 ASST-EXMR: Bruce Campbell
 LEGAL-REP: Daryl D. Muenchau

ABSTRACT:

****Oligonucleotide**** analogs having one or more substitute linkages of the
 formula 2'/3'--S--CH.sub.2 --CH.dbd.5' or 2'/3'--O--CH.sub.2 --CH.dbd.5'
 between adjacent nucleomonomers are disclosed. The substitute linkage
 replace the usual phosphodiester linkage found in unmodified nucleic
 acids. The ****oligonucleotide**** analogs are easy to synthesize, stable in
 vivo, resistant to endogenous nucleases and are able to hybridize to
 target nucleic acid sequences in a sequence specific manner.

9 Claims, 48 Drawing Figures

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US PAT NO: 5,380,833 [IMAGE AVAILABLE] L11: 12 of 56
DATE ISSUED: Jan. 10, 1995
TITLE: Polynucleotide reagents containing selectable cleavage sites
INVENTOR: Michael S. Urdea, Alamo, CA
ASSIGNEE: Chiron Corporation, Emeryville, CA (U.S. corp.)
APPL-NO: 07/806,642
DATE FILED: Dec. 13, 1991
REL-US-DATA: Division of Ser. No. 251,152, Sep. 29, 1988, Pat. No. 5,118,605, Jun. 2, 1992, which is a continuation-in-part of Ser. No. 661,508, Oct. 16, 1984, Pat. No. 4,775,619, Oct. 4, 1988.
INT-CL: [6] C07H 21/04; C12Q 1/68
US-CL-ISSUED: 536/22.1; 435/6; 436/501; 536/23.1, 24.1, 24.3, 24.2, 24.31, 24.32, 24.33, 25.3, 25.4; 935/78, 88
US-CL-CURRENT: 536/22.1; 435/6; 436/501; 536/23.1, 24.1, 24.2, 24.3, 24.31, 24.32, 24.33, 25.3, 25.4; 935/78, 88
SEARCH-FLD: 435/6, 810, 91, 91.1, 91.2; 436/501; 536/25-27, 22.1, 25.3, 23.1, 25.4, 24.1, 24.2, 24.3-24.33; 935/7, 9, 88, 78
REF-CITED:

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Arndt-Jovin et al. (1975) Eur. J. Biochem., vol. 54, pp. 411-418.
Ashley et al. (1984) Anal. Bioch., vol. 140, pp. 95-103.
ART-UNIT: 187
PRIM-EXMR: Margaret Parr
ASST-EXMR: Ardin H. Marschel
LEGAL-REP: Dianne E. Reed, Kenneth M. Goldman, Robert P. Blackburn

ABSTRACT:

Novel methods for assaying a nucleic acid analyte are provided, which employ polynucleotides having **oligonucleotide** sequences substantially homologous to a sequence of interest in the analyte, where the presence or absence of hybridization at a predetermined stringency provides for the release of a label from a support. Particularly, various techniques are employed for binding a label to a support, whereupon cleavage of either a single or double strand, a label may be released from a support, where the release of the label can be **detected** as indicative of the presence of a particular **oligonucleotide** sequence in a sample. The method finds use in diagnosis of disease, genetic monitoring, and analysis of nucleic acid mixtures.

17 Claims, 7 Drawing Figures

US PAT NO: 5,132,292 [IMAGE AVAILABLE] L11: 31 of 56
DATE ISSUED: Jul. 21, 1992
TITLE: **Treatment** of viral hepatitis
INVENTOR: William A. Carter, Birchrunville, PA
ASSIGNEE: Hem Research, Inc., Rockville, MD (U.S. corp.)
APPL-NO: 07/528,962
DATE FILED: May 25, 1990
INT-CL: [5] A51K 31/70
US-CL-ISSUED: 514/44, 46
US-CL-CURRENT: 514/44, 46
SEARCH-FLD: 514/44, 46
REF-CITED:

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Scullard et al Antiviral treatment of chronic . . . infection Hepatology
1:228-232, 1981.
Scullard et al Antiviral treatment of chronic . . . to treatment
Hepatology 2:39-49, 1982.
ART-UNIT: 183
PRIM-EXMR: John W. Rollins
LEGAL-REP: Nixon & Vanderhye

ABSTRACT:

Hepatitis viral infections are efficaciously **treated** with mismatched
dsRNAs, notably rI.multidot.r(C.sub.11-14,.sup.U).sub.n, alone or in
combination with one or more of ganciclovir, coumermycin A1,
dideoxyinosine or its nucleoside analogs.
9 Claims, No Drawings

US PAT NO: 5,124,246 [IMAGE AVAILABLE] L11: 32 of 56
DATE ISSUED: Jun. 23, 1992
TITLE: Nucleic acid multimers and amplified nucleic acid
hybridization assays using same
INVENTOR: Michael S. Urdea, Alamo, CA
Brian Warner, Martinez, CA
Thomas Horn, Berkeley, CA
ASSIGNEE: Chiron Corporation, Emeryville, CA (U.S. corp.)
APPL-NO: 07/340,031
DATE FILED: Apr. 18, 1989
REL-US-DATA: Continuation-in-part of Ser. No. 252,638, Sep. 30, 1988,
abandoned, which is a continuation-in-part of Ser. No.
185,201, Apr. 22, 1988, abandoned, which is a
continuation-in-part of Ser. No. 109,282, Oct. 15, 1987,
abandoned.
INT-CL: [5] C12Q 1/68; C07H 21/00

US-CL-ISSUED: 435/6, 810; 436/501; 935/23, 78, 88; 536/27
 US-CL-CURRENT: 435/6, 810; 436/501; 536/23.1, 24.3, 24.31, 24.32; 935/23,
 78, 88
 SEARCH-FLD: 435/6, 810; 436/501; 536/27; 935/23, 78, 88
 REF-CITED:

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 ART-UNIT: 187
 PRIM-EXMR: Robert A. Wax
 ASST-EXMR: Ardin H. Marschel
 LEGAL-REP: Morrison & Foerster

ABSTRACT:

Linear or branched ****oligonucleotide**** multimers useful as amplifiers in biochemical assays which comprise (1) at least one first single-stranded ****oligonucleotide**** unit that is complementary to a single-stranded ****oligonucleotide**** sequence of interest, and (2) a multiplicity of second single-stranded ****oligonucleotide**** units that are complementary to a single-stranded labeled ****oligonucleotide****. Amplified sandwich nucleic acid hybridizations and immunoassays using the multimers are exemplified.

59 Claims, 24 Drawing Figures

US PAT NO: 4,981,957 [IMAGE AVAILABLE] L11: 39 of 56
 DATE ISSUED: Jan. 1, 1991
 TITLE: ****Oligonucleotides**** with modified phosphate and modified carbohydrate moieties at the respective chain termini
 INVENTOR: Bernard Lebleu, Montpellier, France
 Bernard Bayard, Castelnau Le Lez, France
 ASSIGNEE: Centre National de la Recherche Scientifique, Paris, France (foreign govt.)
 APPL-NO: 06/756,369
 DATE FILED: Jul. 18, 1985
 FRN-PRIOR: France 84 11469 Jul. 19, 1984
 INT-CL: [5] C07H 21/02
 US-CL-ISSUED: 536/27, 28, 29
 US-CL-CURRENT: 536/25.2, 25.5, 26.21, 26.23, 26.26
 SEARCH-FLD: 514/46, 47; 536/27, 28, 29
 REF-CITED:

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- ART-UNIT: 183
- PRIM-EXMR: Ronald W. Griffin
- ASST-EXMR: L. Eric Crane
- LEGAL-REP: Fleit, Jacobson, Cohn, Price, Holman & Stern

ABSTRACT:

The invention relates to novel ****oligonucleotides****, the process for their preparation and their biological uses as mediators of the action of interferon. The ****oligonucleotides**** according to the invention have the formula: ##STR1## in which Y and T are identical or different and represent particularly O, S, Z and W are identical or different and represent particularly O, S, one at least of the elements Y and Z being different from oxygen, X represents particularly --CHOHCH.sub.2 OH, .SIGMA. is a whole number equal to or greater than 2, A represents adenine or one of its derivatives. These ****oligonucleotides**** have antiviral use.

13 Claims, 3 Drawing Figures

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4/9/6 (Item 6 from file: 155)
DIALOG(R) File 155:MEDLINE(R)
(c) format only 1996 Knight-Ridder Info. All rts. reserv.

08092233 92230233

Evidence for involvement of a ribosomal leaky scanning mechanism in the translation of the hepatitis B virus *pol* gene from the viral pregenome RNA.

Lin CG; Lo SJ
Graduate Institute of Microbiology and Immunology, National Yang-Ming Medical College, Taipei, Taiwan, Republic of China.

Virology (UNITED STATES) May 1992, 188 (1) p342-52, ISSN 0042-6822
Journal Code: XEA

Languages: ENGLISH

Document type: JOURNAL ARTICLE

JOURNAL ANNOUNCEMENT: 9207

Subfile: INDEX MEDICUS

In retroviruses, the *pol* gene is expressed in the form of a gag-*pol* fusion protein by the mechanism of ribosomal frameshifting. In studies of the possible mechanism of hepadnaviral *pol* protein synthesis, recent results have ruled out *core*-*pol* fusion protein synthesis by ribosomal frameshifting. In this study, an in vitro transcription and translation coupling system was used to demonstrate that the *HBV* *core* and *pol* proteins could be synthesized independently using the pregenome RNA template. The result has led us to design experiments to distinguish between the involvement of a termination-reinitiation, internal initiation, or leaky scanning mechanism in the *pol* protein synthesis. In vitro experiments were then carried out to measure the amount of *pol* proteins being synthesized from (i) the *preC* mRNA, which contained an extra AUG and seven more nucleotides at the 5'-end in comparison with the pregenome RNA; (ii) the pregenome RNA in the presence of various amounts of *antisense* RNA annealing to the 5'-end of the pregenome RNA; and (iii) the pregenome RNA with an additional hairpin structure located upstream of the *C* *gene*. Results indicated that the synthesis of both *core* and *pol* proteins was concomitantly reduced in these three conditions, which suggested that leaky scanning is the most probable mechanism for *pol* protein synthesis in vitro. To further verify the mechanism in vivo, experiments were performed to assay the activity of DNA *polymerase* in virions, which were obtained from hepatoma cells transfected by plasmids containing either a wild-type sequence (5'-GGCATGG-3') or an optimal initiation context (5'-ACCATGG-3') of the *C* *gene*. Transfection results showed that the plasmid-containing mutations of the *C* *gene* significantly decreased the DNA *polymerase* activity in virions. This observation supports our hypothesis that the leaky scanning model is involved in the synthesis of *pol* protein.

Tags: Human; Support, Non-U.S. Gov't

Descriptors: Gene Products, *pol*--Genetics--GE; *Genes, *pol*;
*Hepatitis B Virus--Genetics--GE; *Ribosomes--Metabolism--ME; *Translation,
Genetic; Base Sequence; Cloning, Molecular; DNA, Viral; Gene Products,
pol--Biosynthesis--BI; Molecular Sequence Data; Plasmids; Protein
Conformation; Radioimmunoprecipitation Assay; RNA, *Antisense*--Metabolism
--ME; Tumor Cells, Cultured

CAS Registry No.: 0 (DNA, Viral); 0 (Gene Products, pol); 0
(Plasmids); 0 (RNA, Antisense)

Gene Symbol: *Pol*

?

QR1.V5

4/9/12 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R)
(c) 1996 Inst for Sci Info. All rts. reserv.

14419126 Genuine Article#: TL227 Number of References: 86
Title: THERAPY OF HEPADNAVIRUS INFECTION USING *ANTISENSE* OLIGONUCLEOTIDES
Author(s): OFFENSPERGER WB; BLUM HE; GEROK W
Corporate Source: UNIV FREIBURG, DEPT MED/D-79106 FREIBURG//GERMANY//; UNIV
ZURICH, DEPT MED/ZURICH//SWITZERLAND/
Journal: INTERVIROLOGY, 1995, V38, N1-2 (JAN-FEB), P113-119
ISSN: 0300-5526
Language: ENGLISH Document Type: ARTICLE
Geographic Location: GERMANY; SWITZERLAND
Subfile: SciSearch; CC LIFE--Current Contents, Life Sciences
Journal Subject Category: VIROLOGY

See ordered.

Abstract: Chronic infection with the hepatitis B virus (*HBV*) is a major health problem worldwide. The only established therapy is alpha-interferon with an efficacy of only 30-40% in highly selected patients. Major theoretical problems of therapeutical strategies against hepadnaviral infections are the limited immune response and the presence of covalently closed *HBV* DNA in the nucleus. Many nucleoside analogues and inhibitors of viral reverse transcriptases were tested in vitro and in vivo with transient effects and often severe side effects. Molecular therapeutic strategies include *antisense* DNA/RNA and ribozymes. In vitro *antisense* oligodeoxynucleotides could be shown to inhibit viral replication and gene expression in human hepatoma cell lines. In vivo an *antisense* oligodeoxynucleotide directed against the 5'-region of the preS gene of the duck hepatitis B virus inhibited the viral replication and gene expression in ducks. These results demonstrate the potential clinical use of *antisense* DNA/RNA as antiviral therapeutics.

Descriptors--Author Keywords: *ANTISENSE* OLIGODEOXYNUCLEOTIDES ; ANTIVIRAL SUBSTANCES ; DUCK HEPATITIS B VIRUS

Identifiers--KeyWords Plus: HEPATITIS-B VIRUS; HUMAN IMMUNODEFICIENCY VIRUS; ROUS-SARCOMA VIRUS; GENE-EXPRESSION; ADENINE-ARABINOSIDE; ANTIVIRAL ACTIVITY; SURFACE-ANTIGEN; DNA-*POLYMERASE*; PILOT TRIAL; *HBV* DNA

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RNA*

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Self Reference:

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KW comb-type branched polynucleotide; sidechain;
 KW extension; binding site; ligation; template; linker; ss.
 OS Synthetic.
 PN WO9313120-A.
 PD 08-JUL-1993.
 PF 22-DEC-1992; U11165.
 PR 23-DEC-1991; US-813586.
 PA (CHIR) CHIRON CORP.
 PI Irvine BD, Kolberg JA, Running JA, Urdea MS;
 DR WPI; 93-227262/28.
 PT DNA probes for detection of hepatitis B virus - in a soln.
 phase
 PT sandwich hybridisation assay
 PS Claim 1; Page 62; 80pp; English.
 CC A "15 x 3" amplified soln. phase nucleic acid sandwich
 hybridisation
 CC assay employs two multimers: (1) an amplifier probe having a
 first
 CC segment (A) that binds to HBV and a second segment (B) that
 CC hybridises to (2) an amplifier multimer having a first segment
 (B*)
 CC that hybridises to the segment (B) and fifteen iterations of
 a
 CC segment (C), wherein segment C hybridises to three labeled
 CC oligonucleotides.
 CC HBV amplifier probes are given in Q45786-824.
 CC HBV capture probes are given in Q45825-833.
 CC Each amplifier probe contained, in addition to the sequences
 CC complementary to the HBV sequences, the 5' extension given in
 CC Q45834, complementary to a segment of the amplifier multimer.
 CC Each capture probe contained, in addition to the sequences
 CC complementary to the HBV sequences, a downstream sequence
 given
 CC in Q45835, complementary to the DNA bound to the solid phase.
 SQ Sequence 30 BP; 4 A; 9 C; 8 G; 9 T;

Query Match 100.0%; Score 20; DB 7; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2.10e-02;
 Matches 20; Conservative 0; Mismatches 0; Indels 0;
 Gaps 0;

Db 3 gttcaagcctccaagctgtg 22
 ||||||||||||||||
 Cp 20 GTTCAAGCCTCCAAGCTGTG 1

SEQ ID NO. 12

Title: >US-08-467-397-10
Description: (1-20) from US08467397.seq
Perfect Score: 20
N.A. Sequence: 1 GTAGGACATGAACAAGAGAT 20
Comp: CATCCTGTACTTGTTCTCTA

SUMMARIES

Result			%				
No.	Score	Query	Match	Length	DB	ID	Description
Pred. No.							

c	1	20	100.0	99	67	HPBPRED	Hepatitis B virus typ
	1.29e-02						
c	2	20	100.0	99	67	HPBPRED	Hepatitis B virus typ
	1.29e-02						
c	3	20	100.0	99	67	HPBPRED	Hepatitis B virus typ

1.29e-02						
c 4	20	100.0	99 67	HPBPRECI	Hepatitis B virus typ	
1.29e-02						
c 5	20	100.0	99 67	HPBPRECA	Hepatitis B virus typ	
1.29e-02						
c 6	20	100.0	99 67	HPBPRECH	Hepatitis B virus typ	
1.29e-02						
c 7	20	100.0	99 67	HPBPRECM	Hepatitis B virus typ	
1.29e-02						
c 8	20	100.0	99 67	HPBPRECB	Hepatitis B virus typ	
1.29e-02						
c 9	20	100.0	99 67	HPBPRECJ	Hepatitis B virus typ	
1.29e-02						
c 10	20	100.0	99 67	HPBPRECG	Hepatitis B virus typ	
1.29e-02						
c 11	20	100.0	99 67	HPBPRECF	Hepatitis B virus typ	
1.29e-02						
c 12	20	100.0	332 67	HPBHBEF	Hepatitis B virus pre	
1.29e-02						
c 13	20	100.0	333 67	HPBHBEF	Hepatitis B virus pre	
1.29e-02						
c 14	20	100.0	333 67	HPBHBEF	Hepatitis B virus pre	
1.29e-02						
c 15	20	100.0	333 67	HPBHBEF	Hepatitis B virus pre	
1.29e-02						
c 16	20	100.0	333 67	HPBHBEF	Hepatitis B virus pre	
1.29e-02						
c 17	20	100.0	544 67	HPBCOREAH	Hepatitis B virus (cl	
1.29e-02						
c 18	20	100.0	675 67	HPBCCB1MUT	Hepatitis B virus ORF	
1.29e-02						
c 19	20	100.0	712 64	HBVXPCC44	Hepatitis B virus X,	
1.29e-02						
c 20	20	100.0	712 64	HBVXPCC45	Hepatitis B virus X,	
1.29e-02						
c 21	20	100.0	712 64	HBVXPCC46	Hepatitis B virus X,	
1.29e-02						
c 22	20	100.0	712 64	HBVXPCC49	Hepatitis B virus X,	
1.29e-02						
c 23	20	100.0	712 64	HBVXPCC48	Hepatitis B virus X,	
1.29e-02						
c 24	20	100.0	712 64	HBVXPCC58	Hepatitis B virus X,	
1.29e-02						
c 25	20	100.0	712 64	HBVXPCC7	Hepatitis B virus X,	
1.29e-02						
c 26	20	100.0	712 64	HBVXPCC55	Hepatitis B virus X,	
1.29e-02						
c 27	20	100.0	712 64	HBVXPCC56	Hepatitis B virus X,	
1.29e-02						
c 28	20	100.0	712 64	HBVXPCC54	Hepatitis B virus X,	
1.29e-02						
c 29	20	100.0	712 64	HBVXPCC53	Hepatitis B virus X,	
1.29e-02						
c 30	20	100.0	712 64	HBVXPCC52	Hepatitis B virus X,	

1.29e-02						
c 31	20	100.0	712	64	HBVXPCC51	Hepatitis B virus X,
1.29e-02						
c 32	20	100.0	712	64	HBVXPCC64	Hepatitis B virus X,
1.29e-02						
c 33	20	100.0	712	64	HBVXPCC14	Hepatitis B virus X,
1.29e-02						
c 34	20	100.0	712	64	HBVXPCC6	Hepatitis B virus X,
1.29e-02						
c 35	20	100.0	2743	67	HPBADYW	human hepatitis b vir
1.29e-02						
c 36	20	100.0	3182	67	HPBHBVAA	Hepatitis B virus var
1.29e-02						
c 37	20	100.0	3182	67	HPBAYW	Human hepatitis B vir
1.29e-02						
c 38	20	100.0	3182	64	HBVORFS	Hepatitis B Virus DNA
1.29e-02						
c 39	20	100.0	3182	64	HBVAYWE	Hepatitis B virus (ay
1.29e-02						
c 40	20	100.0	3193	67	HPBHBVA	Hepatitis B virus gen
1.29e-02						
c 41	20	100.0	3207	67	HPBHBCAGA	Hepatitis B virus gen
1.29e-02						
c 42	20	100.0	3212	67	HPBETNC	Hepatitis B virus env
1.29e-02						
c 43	20	100.0	3215	67	HPBHBCAGB	Hepatitis B virus gen
1.29e-02						
c 44	20	100.0	3215	67	HPBHBCAGC	Hepatitis B virus gen
1.29e-02						
c 45	20	100.0	3215	67	HPBADW1	Hepatitis B virus (HB
1.29e-02						

ALIGNMENTS

RESULT 1

LOCUS HPBPRED 99 bp DNA VRL

11-MAY-1994

DEFINITION Hepatitis B virus type 4 precore protein (pre-C region, C) gene, 5' end.

ACCESSION M76690

KEYWORDS e antigen; precore protein; tolerogen.

SOURCE Hepatitis B virus DNA.

ORGANISM Hepatitis B virus

Viridae; ds-DNA enveloped viruses; Hepadnaviridae.

REFERENCE 1 (bases 1 to 99)

AUTHORS Santantonio,T., Jung,M.-C., Miska,S., Pastore,G., Pape,G.R. and Will,H.

TITLE Prevalence and type of Pre-C HBV mutants in anti-hbe positive carriers with chronic liver disease in a highly endemic area

JOURNAL Virology 183, 840-844 (1991)
 MEDLINE 91306476
 COMMENT NCBI gi: 485347
 FEATURES Location/Qualifiers
 source 1..99
 /organism="Hepatitis B virus"
 /sequenced_mol="DNA"
 CDS 10..93
 /gene="C"
 /standard_name="pre-C region"
 /note="NCBI gi: 485348"
 /codon_start=1
 /product="precore protein"
 /translation="MQLFHLCLIISCSCPTVQASKLCLGWL"
 mutation 92
 /gene="C"
 /note="g in wt; a in virus type 4 (creates
 internal stop codon) "
 mutation 95
 /note="g in wt; a in virus type 4 (gly to
 asp) "
 BASE COUNT 19 a 30 c 18 g 32 t
 ORIGIN

Query Match 100.0%; Score 20; DB 67; Length 99;
 Best Local Similarity 100.0%; Pred. No. 1.29e-02;
 Matches 20; Conservative 0; Mismatches 0; Indels 0;
 Gaps 0;

Db 37 atctcttggttcattgcctac 56
 |||||
 Cp 20 ATCTCTTGTTTCATGTCCTAC 1

RESULT 13
LOCUS
24-SEP-1993

HPBHBEE

333 bp

DNA

VRL

DEFINITION Hepatitis B virus precore and core protein gene, 5' end of cds.

ACCESSION L12360

KEYWORDS HBcAg protein; HBeAg protein; core protein; nucleotide binding protein; precore protein.

SOURCE Hepatitis B virus DNA.

ORGANISM Hepatitis B virus

Viridae; ds-DNA enveloped viruses; Hepadnaviridae.

REFERENCE 1 (sites)

AUTHORS Tong, S.-p., Li, J., Vitvitski, L. and Trepco, C.

TITLE Active hepatitis B virus replication in the presence of anti-HBe is

associated with viral variants containing an inactive pre-C region

JOURNAL Virology 176, 596-603 (1990)

MEDLINE 90266476

REFERENCE 2 (bases 1 to 333) *starting at HSV1*

AUTHORS Li, J.S., Tong, S.P., Wen, Y.M., Vitvitski, L., Zhang, Q. and Trepco, C.

TITLE Hepatitis B virus genotype A rarely circulates as an HBe-minus

mutant: possible contribution of a single nucleotide in the precore

region

JOURNAL J. Virol. 67 (9), 5402-5410 (1993)

MEDLINE 93353617

COMMENT NCBI gi: 306269

FEATURES Location/Qualifiers

source

1..333

/organism="Hepatitis B virus"

/sequenced_mol="DNA"

/note="genotype D; from French HBeAg- patient"

CDS

1..>333

/standard_name="HBeAg"

/note="1 stop when translation attempted,

frame 1, code 0;

1 stop when translation attempted, frame 1,

code 0"

/codon_start=1

/product="precore protein"

mutation

82..84

/note="HBe-abolishing"

CDS

88..>333

/standard_name="HBcAg"

/note="NCBI gi: 306270"

/codon_start=1

/product="core protein"

/translation="MDTDPYKEFGASVELLTFLPSDFFPVSRDLLDTASALFRDALES

PEHCSPHHTALRQAILCWGELMTLATRVGGNLEDPASR"

BASE COUNT 69 a 85 c 73 g 106 t

ORIGIN

Query Match 100.0%; Score 20; DB 67; Length 333;

Best Local Similarity 100.0%; Pred. No. 1.29e-02;
Matches 20; Conservative 0; Mismatches 0; Indels 0;
Gaps 0;

Db 28 atctcttggttcacgtcctac 47
 |||||
Cp 20 ATCTCTTGTTTCATGTCCTAC 1

RESULT 9

ID Q45797 standard; DNA; 30 BP.

AC Q45797;

DT 07-DEC-1993 (first entry)

DE HBV amplifier probe HBV.D44*070590-A.

KW Probe; hybridisation; assay; detection; hepatitis B virus; HBV;

KW human lymphotropic retrovirus; solution phase;

KW comb-type branched polynucleotide; sidechain;

KW extension; binding site; ligation; template; linker; ss.

OS Synthetic.

PN WO9313120-A.

PD 08-JUL-1993.

PF 22-DEC-1992; U11165.

PR 23-DEC-1991; US-813586.

PA (CHIR) CHIRON CORP.

PI Irvine BD, Kolberg JA, Running JA, Urdea MS;

DR WPI; 93-227262/28.

PT DNA probes for detection of hepatitis B virus - in a soln. phase

PT sandwich hybridisation assay

PS Claim 1; Page 62; 80pp; English.

CC A "15 x 3" amplified soln. phase nucleic acid sandwich hybridisation

CC assay employs two multimers: (1) an amplifier probe having a first

CC segment (A) that binds to HBV and a second segment (B) that

CC hybridises to (2) an amplifier multimer having a first segment (B*)

CC that hybridises to the segment (B) and fifteen iterations of a

CC segment (C), wherein segment C hybridises to three labeled oligonucleotides.

CC HBV amplifier probes are given in Q45786-824.

CC HBV capture probes are given in Q45825-833.

CC Each amplifier probe contained, in addition to the sequences complementary to the HBV sequences, the 5' extension given in Q45834, complementary to a segment of the amplifier multimer.

CC Each capture probe contained, in addition to the sequences complementary to the HBV sequences, a downstream sequence given

CC in Q45835, complementary to the DNA bound to the solid phase.
SQ Sequence 30 BP; 4 A; 10 C; 3 G; 10 T;

Query Match 80.0%; Score 16; DB 7; Length 30;
Best Local Similarity 87.5%; Pred. No. 5.34e+00;
Matches 14; Conservative 2; Mismatches 0; Indels 0;
Gaps 0;

Db 15 atctcwtgtwcatgtc 30
|||||:||||:|||||
Cp 20 ATCTCTTGTTTCATGTC 5

SEQ ID NO. 10
probe HBVI
encompassed in
probe taught in
Irvine et al.
→ SEQ. ID NO. 17

Title: >US-08-467-397-42
Description: (1-20) from US08467397.seq
Perfect Score: 20
N.A. Sequence: 1 GGCATTTGGTGGTCTATAAG 20
Comp: CCGTAAACCACCAGATATTC

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
Pred. No.						
c 1	20	100.0	675	67	HPBCCB1MUT	Hepatitis B virus ORF
1.22e-03						
c 2	20	100.0	703	64	HBVXPCC31	Hepatitis B virus X,
1.22e-03						
c 3	20	100.0	712	64	HBVXPCC23	Hepatitis B virus X,

1.22e-03						
c 4	20	100.0	712	64	HBVXPCC33	Hepatitis B virus X,
1.22e-03						
c 5	20	100.0	712	64	HBVXPCC35	Hepatitis B virus X,
1.22e-03						
c 6	20	100.0	712	64	HBVXPCC36	Hepatitis B virus X,
1.22e-03						
c 7	20	100.0	712	64	HBVXPCC25	Hepatitis B virus X,
1.22e-03						
c 8	20	100.0	712	64	HBVXPCC30	Hepatitis B virus X,
1.22e-03						
c 9	20	100.0	712	64	HBVXPCC3	Hepatitis B virus X,
1.22e-03						
c 10	20	100.0	712	64	HBVXPCC34	Hepatitis B virus X,
1.22e-03						
c 11	20	100.0	712	64	HBVXPCC40	Hepatitis B virus X,
1.22e-03						
c 12	20	100.0	712	64	HBVXPCC42	Hepatitis B virus X,
1.22e-03						
c 13	20	100.0	712	64	HBVXPCC37	Hepatitis B virus X,
1.22e-03						
c 14	20	100.0	712	64	HBVXPCC38	Hepatitis B virus X,
1.22e-03						
c 15	20	100.0	712	64	HBVXPCC43	Hepatitis B virus X,
1.22e-03						
c 16	20	100.0	712	64	HBVXPCC47	Hepatitis B virus X,
1.22e-03						
c 17	20	100.0	712	64	HBVXPCC44	Hepatitis B virus X,
1.22e-03						
c 18	20	100.0	712	64	HBVXPCC45	Hepatitis B virus X,
1.22e-03						
c 19	20	100.0	712	64	HBVXPCC46	Hepatitis B virus X,
1.22e-03						
c 20	20	100.0	712	64	HBVXPCC49	Hepatitis B virus X,
1.22e-03						
c 21	20	100.0	712	64	HBVXPCC5	Hepatitis B virus X,
1.22e-03						
c 22	20	100.0	712	64	HBVXPCC48	Hepatitis B virus X,
1.22e-03						
c 23	20	100.0	712	64	HBVXPCC41	Hepatitis B virus X,
1.22e-03						
c 24	20	100.0	712	64	HBVXPCC39	Hepatitis B virus X,
1.22e-03						
c 25	20	100.0	712	64	HBVXPCC9	Hepatitis B virus X,
1.22e-03						
c 26	20	100.0	712	64	HBVXPCC55	Hepatitis B virus X,
1.22e-03						
c 27	20	100.0	712	64	HBVXPCC56	Hepatitis B virus X,
1.22e-03						
c 28	20	100.0	712	64	HBVXPCC54	Hepatitis B virus X,
1.22e-03						
c 29	20	100.0	712	64	HBVXPCC53	Hepatitis B virus X,
1.22e-03						
c 30	20	100.0	712	64	HBVXPCC52	Hepatitis B virus X,

1.22e-03						
c 31	20	100.0	712	64	HBVXPCC51	Hepatitis B virus X,
1.22e-03						
c 32	20	100.0	712	64	HBVXPCC60	Hepatitis B virus X,
1.22e-03						
c 33	20	100.0	715	64	HBVXPCC13	Hepatitis B virus X,
1.22e-03						
c 34	20	100.0	718	64	HBVXPCC8	Hepatitis B virus X,
1.22e-03						
c 35	20	100.0	2743	67	HPBADYW	human hepatitis b vir
1.22e-03						
c 36	20	100.0	3161	64	HBVAYWMCG	Hepatitis B virus (ay
1.22e-03						
c 37	20	100.0	3182	67	HPBHBVAA	Hepatitis B virus var
1.22e-03						
c 38	20	100.0	3182	67	HPBVCG	Chimpanzee hepatitis
1.22e-03						
c 39	20	100.0	3182	67	HPBAYW	Human hepatitis B vir
1.22e-03						
c 40	20	100.0	3182	64	HBVGEN1	Human hepatitis B vir
1.22e-03						
c 41	20	100.0	3185	67	HPBMUT	Hepatitis B virus mut
1.22e-03						
c 42	20	100.0	3212	64	HHVBE4	Human hepatitis virus
1.22e-03						
c 43	20	100.0	3215	64	HHVBF	Human hepatitis virus
1.22e-03						
c 44	20	100.0	3215	64	HHVBFFOU	Human hepatitis virus
1.22e-03						
c 45	20	100.0	3995	67	HSHBV	H.sapiens genomic DNA
1.22e-03						

ALIGNMENTS

RESULT 1
 LOCUS HPBCCB1MUT 675 bp DNA VRL
 13-AUG-1991
 DEFINITION Hepatitis B virus ORF2 (Pre-C/C) gene, complete cds.
 ACCESSION M74502
 KEYWORDS hepatitis.
 SOURCE Hepatitis B virus DNA.
 ORGANISM Hepatitis B virus
 Viridae; ds-DNA enveloped viruses; Hepadnaviridae.
 REFERENCE 1 (bases 1 to 675)
 AUTHORS Tran,A., Kremsdorf,D., Capel,F., Housset,C.,
 Dauguet,C.,
 Petit,M.-A. and Brechot,C.
 TITLE Emergence of and takeover by hepatitis B virus (HBV)
 rearrangements
 in the pre-S/S and pre-C/C genes during chronic HBV
 infection
 JOURNAL J. Virol. 65, 3566-3574 (1991)
 MEDLINE 91251207

*This one covers
the full range*

COMMENT NCBI gi: 329646
FEATURES Location/Qualifiers
source 1..675
/organism="Hepatitis B virus"
/sequenced_mol="DNA"
misc_feature 1..675
/gene="Pre-C/C"
/note="B1 mutated molecule; internal stop
codon (TAG) at nucleotides 82-84; putative CDS; ORF1"
BASE COUNT 149 a 165 c 147 g 214 t
ORIGIN

Query Match 100.0%; Score 20; DB 67; Length 675;
Best Local Similarity 100.0%; Pred. No. 1.22e-03;
Matches 20; Conservative 0; Mismatches 0; Indels 0;
Gaps 0;

Db 515 cttatagaccaccaaagcc 534
|||||||
Cp 20 CTTATAGACCACCAAATGCC 1

SUMMARIES

Result	No.	Score	% Query Match	Length	DB	ID	Description

c	1	20	100.0	30	7	Q45789	HBV amplifier probe H

9.99e-03							
2	20	100.0	51	2	Q06726	:HBV.LLA2C.87 ampli	
9.99e-03							
c 3	20	100.0	549	2	N60295	DNA encoding hepatiti	
9.99e-03							
c 4	20	100.0	552	4	N00001	Sequence encoding sur	
9.99e-03							
c 5	20	100.0	1142	5	Q29105	I3L promoter/S12/core	
9.99e-03							
c 6	20	100.0	2743	1	Q04799	Recombinant sequence	
9.99e-03							
c 7	20	100.0	2743	4	N00003	Sequence of a part of	
9.99e-03							
c 8	18	90.0	91	9	Q51746	Oligonucleotide probe	
1.41e-01							
c 9	18	90.0	504	4	Q25398	Sequence coding for a	
1.41e-01							
c 10	18	90.0	534	4	Q25400	Sequence coding for a	
1.41e-01							
c 11	18	90.0	534	4	Q25399	Sequence coding for a	
1.41e-01							
c 12	18	90.0	549	1	N82266	HBeAg/beta-Gal fusion	
1.41e-01							
c 13	18	90.0	549	13	Q73205	Hepatitis B Virus cor	
1.41e-01							
c 14	18	90.0	552	14	Q81560	Hepatitis B virus pol	
1.41e-01							
c 15	18	90.0	558	6	Q34944	Altered HBcAg coding	
1.41e-01							
c 16	18	90.0	558	6	Q34943	Native HBcAg coding s	
1.41e-01							
c 17	18	90.0	558	6	Q34946	Altered HBcAg coding	
1.41e-01							
c 18	18	90.0	558	6	Q34998	Modified hepatitis B	
1.41e-01							
c 19	18	90.0	558	4	Q25396	Sequence coding for a	
1.41e-01							
c 20	18	90.0	558	6	Q34947	Altered HBcAg coding	
1.41e-01							
c 21	18	90.0	558	6	Q34997	Modified hepatitis B	
1.41e-01							
c 22	18	90.0	558	4	Q25630	Sequence coding for a	
1.41e-01							
c 23	18	90.0	558	6	Q35101	Altered HBcAg coding	
1.41e-01							
c 24	18	90.0	558	6	Q35322	Native HBcAg coding s	
1.41e-01							
c 25	18	90.0	558	6	Q34995	Modified hepatitis B	
1.41e-01							
c 26	18	90.0	558	11	Q67964	Sequence encoding ful	
1.41e-01							
c 27	18	90.0	558	6	Q35103	Altered HBcAg coding	
1.41e-01							
c 28	18	90.0	582	8	Q47735	Hepatitis B core gene	

1.41e-01							
c 29	18	90.0	588	4	Q25640	Sequence coding for a	
1.41e-01							
c 30	18	90.0	627	11	Q67959	Sequence encoding HBV	
1.41e-01							
c 31	18	90.0	630	11	Q67971	Sequence of core-S* a	
1.41e-01							
c 32	18	90.0	639	11	Q67960	Sequence encoding HBV	
1.41e-01							
c 33	18	90.0	645	6	Q34996	Modified hepatitis B	
1.41e-01							
c 34	18	90.0	645	6	Q35105	Altered HBcAg coding	
1.41e-01							
c 35	18	90.0	645	6	Q34999	Modified hepatitis B	
1.41e-01							
c 36	18	90.0	645	6	Q35102	Altered HBcAg coding	
1.41e-01							
c 37	18	90.0	655	8	Q47014	HBV (adw) corrected p	
1.41e-01							
c 38	18	90.0	660	1	N82265	HBcAg/beta-Gal fusion	
1.41e-01							
c 39	18	90.0	660	1	N91081	DNA sequence of subcl	
1.41e-01							
c 40	18	90.0	858	11	Q67965	Sequence of HBV preS1	
1.41e-01							
c 41	18	90.0	882	11	Q67966	PreS1 full length cor	
1.41e-01							
c 42	18	90.0	3188	4	N40244	Hepatitis virus adr-B	
1.41e-01							
c 43	18	90.0	3200	2	N70165	Entire nucleotide seq	
1.41e-01							
c 44	18	90.0	3200	3	N40243	DNA encoding pre HBsA	
1.41e-01							
c 45	18	90.0	3214	1	Q05377	Fragment of plasmid p	
1.41e-01							

RESULT 1

ID Q45789 standard; DNA; 30 BP.

AC Q45789;

DT 07-DEC-1993 (first entry)

DE HBV amplifier probe HBV.87*.

KW Probe; hybridisation; assay; detection; hepatitis B virus;
HBV;

KW human lymphotropic retrovirus; solution phase;

KW comb-type branched polynucleotide; sidechain;

KW extension; binding site; ligation; template; linker; ss.

OS Synthetic.

PN W09313120-A.

PD 08-JUL-1993.

PF 22-DEC-1992; U11165.

PR 23-DEC-1991; US-813586.

PA (CHIR) CHIRON CORP.
 PI Irvine BD, Kolberg JA, Running JA, Urdea MS;
 DR WPI; 93-227262/28.
 PT DNA probes for detection of hepatitis B virus - in a soln.
 phase
 PT sandwich hybridisation assay
 PS Claim 1; Page 62; 80pp; English.
 CC A "15 x 3" amplified soln. phase nucleic acid sandwich
 hybridisation
 CC assay employs two multimers: (1) an amplifier probe having a
 first
 CC segment (A) that binds to HBV and a second segment (B) that
 CC hybridises to (2) an amplifier multimer having a first segment
 (B*)
 CC that hybridises to the segment (B) and fifteen iterations of
 a
 CC segment (C), wherein segment C hybridises to three labeled
 CC oligonucleotides.
 CC HBV amplifier probes are given in Q45786-824.
 CC HBV capture probes are given in Q45825-833.
 CC Each amplifier probe contained, in addition to the sequences
 CC complementary to the HBV sequences, the 5' extension given in
 CC Q45834, complementary to a segment of the amplifier multimer.
 CC Each capture probe contained, in addition to the sequences
 CC complementary to the HBV sequences, a downstream sequence
 given
 CC in Q45835, complementary to the DNA bound to the solid phase.
 SQ Sequence 30 BP; 9 A; 10 C; 3 G; 5 T;

Query Match 100.0%; Score 20; DB 7; Length 30;
 Best Local Similarity 90.0%; Pred. No. 9.99e-03;
 Matches 18; Conservative 2; Mismatches 0; Indels 0;
 Gaps 0;

Db 2 cytayagaccaccaaagcc 21
 |::|:|||||||
 Cp 20 CTTATAGACCACCAAATGCC 1

RESULT 2
 ID Q06726 standard; DNA; 51 BP.
 AC Q06726;
 DT 01-MAR-1991 (first entry)
 DE :HBV.LLA2C.87 amplification probe (3'-5').
 KW Probe; amplification; sandwich hybridisation; hepatitis B
 virus;
 KW HBV; ss.
 OS Synthetic.
 FH Key Location/Qualifiers
 FT misc_feature 32..51
 FT /*tag= a
 FT /label=LLA2C 20mer
 PN W09013667-A.
 PD 15-NOV-1990.

PF 16-JAN-1990; U02049.
 PR 18-APR-1989; US-340031.
 PA (CHIR-) CHIRON CORP.
 PI Urdea MS, Warner B, Running JA, Kolberg JA, Clyne JM;
 PI Sanchez-Pescador R, Horn T;
 DR WPI; 90-361500/48.
 PT Amplified nucleic-acid sandwich hybridisation assay - for
 PT hepatitis B virus, using amplifier and capture probes.
 PS Claim 2; Fig 9; 73pp; English.
 CC The probe is one of a series designed from a computer
 comparison of
 CC the nine HBV subtypes reported in Gene Bank. All the probes
 have
 CC an extension at the 5' end. For probes used for amplification
 this
 CC comprises the 20mer LLA2C. (For the capture set the extension
 is
 CC XT1). The probes (subtype non-specific, SN) are of varying
 length
 CC and contain up to 32-fold degeneracy. They give improved
 results
 CC compared with those achieved in the HBV assa of EP-317077
 (which
 CC used adw specific probes), producing fewer false negatives.
 The
 CC probes are used in a soln. sandwich DNA hybridisation assay to
 CC detect HBV DNA in an analyte.
 CC See also Q06692-Q06740.
 SQ Sequence 51 BP; 10 A; 8 C; 16 G; 14 T;

Query Match 100.0%; Score 20; DB 2; Length 51;
 Best Local Similarity 90.0%; Pred. No. 9.99e-03;
 Matches 18; Conservative 2; Mismatches 0; Indels 0;
 Gaps 0;

Db 11 ggcatTTGGTGGTCTrtarg 30
 |||||:|:|
 Qy 1 GGCATTGGTGGTCTATAAG 20

RESULT 3

ID N60295 standard; DNA; 549 BP.
AC N60295;
DT 01-AUG-1991 (first entry)
DE DNA encoding hepatitis B virus polypeptide.
KW Hepatitis B virus; ss DNA; vaccine; diagnosis;
OS Hepatitis B virus.
PN EP-182442-A.
PD 28-MAY-1986.
PF 21-DEC-1979; 201908.
PR 22-DEC-1978; GB-049907.
PR 27-DEC-1978; GB-050039.
PR 01-NOV-1979; GB-037910.
PR 01-JAN-1985; EP-201908.

PA (BIOJ) BIOGEN NV.
 PA (BIOG-) BIOGEN INC.
 PI Murray K, Schaller HE;
 DR WPI; 86-138858/22.
 DR P-PSDB; P61103.
 PT New recombinant DNA molecules - useful in cloning and
 expressing
 PT DNA sequence coding for hepatitis B virus antigenic
 poly:peptide
 PT for use in vaccines
 PS Claim 4; page 37-8; 42pp; English.
 CC The DNA sequence encodes a polypeptide with hepatitis B virus
 (HBV)
 CC antigenicity. The polypeptide is an HBV surface or core
 antigen. The
 CC HBV antigens and genes can be obtd. in substantial amts. and
 in
 CC uncontaminated form, and may be used to produce vaccines. The
 CC polypeptide may be used to diagnose HBV infection. The
 polypeptide
 CC may be expressed using a vector. HBV has a narrow host range
 and
 CC cannot be grown in tissue culture systems, so it has not
 previously
 CC been available in quantity.
 SQ Sequence 549 BP; 132 A; 134 C; 122 G; 161 T;

Query Match 100.0%; Score 20; DB 2; Length 549;
 Best Local Similarity 100.0%; Pred. No. 9.99e-03;
 Matches 20; Conservative 0; Mismatches 0; Indels 0;
 Gaps 0;

Db 392 cttatagaccaccaaagcc 411
 |||||
 Cp 20 CTTATAGACCACCAAATGCC 1

teacher sequence
oligos HBV 92 → HBV pol C
g

Title: >US-08-467-397-1
Description: (1-20) from US08467397.seq
Perfect Score: 20
N.A. Sequence: 1 GGTGCGCAGACCAATTTATG 20
Comp: CCACGCGTCTGGTTAAATAC

SUMMARIES

Result	No.	Score	% Query Match	Length	DB	ID	Description

c	1	20	100.0	250	67	HPBDNASEQB	Hepatitis B virus DNA
		2.99e-04					
c	2	20	100.0	250	67	HPBDNASEQA	Hepatitis B virus DNA
		2.99e-04					
c	3	20	100.0	404	86	HBU33191	Hepatitis B Virus clo

2.99e-04						
c 4	20	100.0	457	68	S41176	X=transactivator [hep
2.99e-04						
c 5	20	100.0	465	68	S41175	X=transactivator [hep
2.99e-04						
c 6	20	100.0	712	64	HBVXPCC35	Hepatitis B virus X,
2.99e-04						
c 7	20	100.0	712	64	HBVXPCC30	Hepatitis B virus X,
2.99e-04						
c 8	20	100.0	712	64	HBVXPCC3	Hepatitis B virus X,
2.99e-04						
c 9	20	100.0	712	64	HBVXPCC34	Hepatitis B virus X,
2.99e-04						
c 10	20	100.0	712	64	HBVXPCC33	Hepatitis B virus X,
2.99e-04						
c 11	20	100.0	712	64	HBVXPCC40	Hepatitis B virus X,
2.99e-04						
c 12	20	100.0	712	64	HBVXPCC41	Hepatitis B virus X,
2.99e-04						
c 13	20	100.0	712	64	HBVXPCC42	Hepatitis B virus X,
2.99e-04						
c 14	20	100.0	712	64	HBVXPCC38	Hepatitis B virus X,
2.99e-04						
c 15	20	100.0	712	64	HBVXPCC21	Hepatitis B virus X,
2.99e-04						
c 16	20	100.0	712	64	HBVXPCC43	Hepatitis B virus X,
2.99e-04						
c 17	20	100.0	712	64	HBVXPCC19	Hepatitis B virus X,
2.99e-04						
c 18	20	100.0	712	64	HBVXPCC44	Hepatitis B virus X,
2.99e-04						
c 19	20	100.0	712	64	HBVXPCC45	Hepatitis B virus X,
2.99e-04						
c 20	20	100.0	712	64	HBVXPCC47	Hepatitis B virus X,
2.99e-04						
c 21	20	100.0	712	64	HBVXPCC49	Hepatitis B virus X,
2.99e-04						
c 22	20	100.0	712	64	HBVXPCC5	Hepatitis B virus X,
2.99e-04						
c 23	20	100.0	712	64	HBVXPCC37	Hepatitis B virus X,
2.99e-04						
c 24	20	100.0	712	64	HBVXPCC4	Hepatitis B virus X,
2.99e-04						
c 25	20	100.0	712	64	HBVXPCC39	Hepatitis B virus X,
2.99e-04						
c 26	20	100.0	712	64	HBVXPCC17	Hepatitis B virus X,
2.99e-04						
c 27	20	100.0	712	64	HBVXPCC15	Hepatitis B virus X,
2.99e-04						
c 28	20	100.0	712	64	HBVXPCC16	Hepatitis B virus X,
2.99e-04						
c 29	20	100.0	712	64	HBVXPCC18	Hepatitis B virus X,
2.99e-04						
c 30	20	100.0	712	64	HBVXPCC20	Hepatitis B virus X,

2.99e-04	c 31	20	100.0	712	64	HBVXPCC1	Hepatitis B virus X,
2.99e-04	c 32	20	100.0	712	64	HBVXPCC10	Hepatitis B virus X,
2.99e-04	c 33	20	100.0	712	64	HBVXPCC12	Hepatitis B virus X,
2.99e-04	c 34	20	100.0	715	64	HBVXPCC13	Hepatitis B virus X,
2.99e-04	c 35	20	100.0	3161	64	HBVAYWMCG	Hepatitis B virus (ay
2.99e-04	c 36	20	100.0	3182	67	HPBHBVAA	Hepatitis B virus var
2.99e-04	c 37	20	100.0	3182	67	HPBAYW	Human hepatitis B vir
2.99e-04	c 38	20	100.0	3182	64	HBVGEN1	Human hepatitis B vir
2.99e-04	c 39	20	100.0	3185	67	HPBMUT	Hepatitis B virus mut
2.99e-04	c 40	20	100.0	3212	64	HHVBE4	Human hepatitis virus
2.99e-04	c 41	20	100.0	3215	64	HHVBFFOU	Human hepatitis virus
2.99e-04	c 42	20	100.0	3221	67	HVHEPB	Hepatitis B virus (HB
2.99e-04	c 43	20	100.0	3221	67	HPBADWZCG	Hepatitis B virus (su
2.99e-04	c 44	20	100.0	3221	64	HBVXCPS	Hepatitis B Virus X,
2.99e-04	c 45	20	100.0	3995	67	HS HBV	H.sapiens genomic DNA

ALIGNMENTS

RESULT 1
 LOCUS HPBDNASEQB 250 bp DNA VRL
 19-JUL-1994
 DEFINITION Hepatitis B virus DNA sequence, stem loop.
 ACCESSION L28718
 KEYWORDS .
 SOURCE Hepatitis B virus (individual_isolate Patient 14) DNA.
 ORGANISM Hepatitis B virus
 Viridae; ds-DNA enveloped viruses; Hepadnaviridae.
 REFERENCE 1 (bases 1 to 250)
 AUTHORS Laskus, T., Rakela, J. and Persing, D.H.
 TITLE The stem-loop structure of the cis-encapsidation signal
 is highly conserved in naturally occurring hepatitis B virus
 variants
 JOURNAL Virology 200, 809-812 (1994)
 MEDLINE 94233747
 COMMENT NCBI gi: 453531
 FEATURES Location/Qualifiers

* Set this one, too teaches seg.
 I like the highly conserved part.
 -may provide motivation to target this region

```

source          1..250
                 /organism="Hepatitis B virus"
                 /isolate="Patient 14"
                 /sequenced_mol="DNA"
stem_loop       116..176
BASE COUNT      51 a      55 c      58 g      86 t
ORIGIN

```

```

Query Match      100.0%;  Score 20;  DB 67;  Length 250;
Best Local Similarity 100.0%;  Pred. No. 2.99e-04;
Matches         20;  Conservative    0;  Mismatches    0;  Indels    0;
Gaps            0;

```

```

Db      57 cataaattggtctgcgcacc 76
        |||
Cp      20 CATAAATTGGTCTGCGCACC 1

```

RESULT 4
LOCUS S41176 457 bp DNA VRL
09-OCT-1992
DEFINITION X=transactivator [hepatitis B virus HBV, human, Genomic Mutant, 457

nt].
ACCESSION S41176
KEYWORDS
SOURCE hepatitis B virus HBV human.
ORGANISM Unknown.
Unclassified.

REFERENCE 1 (bases 1 to 457)
AUTHORS Repp,R., Keller,C., Borkhardt,A., Csecke,A.,
Schaefer,S.,
Gerlich,W.H. and Lampert,F.

TITLE Detection of a hepatitis B virus variant with a truncated X gene and enhancer II

JOURNAL Arch. Virol. 125 (1-4), 299-304 (1992)

MEDLINE 92352333

REMARK GenBank staff at the National Library of Medicine created this entry [NCBI gibbsq 109914] from the original journal article.

COMMENT This sequence comes from Fig. 1.
NCBI gi: 252541

FEATURES Location/Qualifiers
source 1..457

CDS /organism="hepatitis B virus HBV"
1..405

/note="transactivator; This sequence comes from Fig. 1.

NCBI gi: 252542"
/codon_start=1
/product="X"

/translation="MAARLCCQLDPARDVLCLRPVGAESRGRPFSGSLGALSSPSPST

VSTDHGAHLSLRGLPVCAFSSAGPCALRFTSARRMETTVNAHQFLPKVLHKRTLGLSA
MSTTDLEAYFKDCLFKDWHEELGEEIRLNIRRL"

BASE COUNT 84 a 140 c 117 g 116 t
ORIGIN

Query Match 100.0%; Score 20; DB 68; Length 457;
Best Local Similarity 100.0%; Pred. No. 2.99e-04;
Matches 20; Conservative 0; Mismatches 0; Indels 0;
Gaps 0;

Db 407 cataaattggtctgcgacc 426
|||||
Cp 20 CATAAATTGGTCTGCGCACC 1

no-
upon further
analysis,
this one would
teach sequence
of X gene (up to
oligo HBV 72
in Fig 1)

So this one
would cover
426 nts out
of the 529 covered
in the claims
(would cover up
to oligo seq ID NO
31)

get this
ref
no - go ahead
+ get - it may
teach oligo
probes.

QR360.A7

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
Pred. No.						
1	20	100.0	74	8	Q47282	HBV ORF6 sequence iso
2.24e-03						
c 2	20	100.0	750	1	N80943	HBV core gene of plas
2.24e-03						
c 3	20	100.0	2342	1	N93072	Sequence encoding S1,
2.24e-03						
c 4	20	100.0	3183	4	N30035	DNA contg. surface an
2.24e-03						
c 5	20	100.0	3200	2	N70165	Entire nucleotide seq
2.24e-03						
c 6	20	100.0	3200	3	N40243	DNA encoding pre HBsA
2.24e-03						
c 7	20	100.0	5618	15	Q88310	Plasmid pRc/CMV-HBS c
2.24e-03						
c 8	16	80.0	50	12	Q69846	Hepatitis B virus sub
6.99e-01						
c 9	16	80.0	3214	1	Q05377	Fragment of plasmid p
6.99e-01						
c 10	16	80.0	3214	2	N60714	Sequence encoding adr
6.99e-01						
c 11	16	80.0	3835	1	Q05378	Sequence of hepatitis
6.99e-01						
12	14	70.0	91	9	Q51746	Oligonucleotide probe
1.03e+01						
c 13	14	70.0	91	9	Q51746	Oligonucleotide probe
1.03e+01						
c 14	14	70.0	204	1	N81164	Base substituted E.co
1.03e+01						
c 15	14	70.0	1615	12	Q70667	ScFv-DNaseI fusion DN
1.03e+01						
c 16	14	70.0	1624	12	Q70666	ScFv-DNaseI fusion DN
1.03e+01						
c 17	14	70.0	1648	12	Q70665	ScFv-DNaseI fusion DN
1.03e+01						
c 18	13	65.0	343	8	Q59071	Human brain Expressed
3.74e+01						
c 19	13	65.0	343	6	Q39659	Expressed Sequence Ta
3.74e+01						

20	13	65.0	1640	4	Q25620	Enantioselective amid
3.74e+01						
21	13	65.0	1816	2	Q11992	Enantioselective amid
3.74e+01						
22	13	65.0	2944	1	N80253	Insert of lambda 3 en
3.74e+01						
c 23	13	65.0	3250	10	Q55326	Mycobacterium BCG imm
3.74e+01						
24	13	65.0	11785	12	Q74694	Genomic RNA sequence
3.74e+01						
c 25	12	60.0	53	13	Q78349	Fv hapten-binding ant
1.30e+02						
26	12	60.0	105	3	Q21256	PND EE308-2.
1.30e+02						
c 27	12	60.0	239	2	N81396	Sequence encoding vir
1.30e+02						
28	12	60.0	312	2	N70764	Partial sequence of t
1.30e+02						
c 29	12	60.0	581	9	Q52496	Helminth aminopeptida
1.30e+02						
c 30	12	60.0	851	4	N30060	Sequence of the PGK (
1.30e+02						
c 31	12	60.0	1017	13	Q73708	Brevibacterium flavum
1.30e+02						
c 32	12	60.0	1309	1	Q04914	pING323CVS sequence c
1.30e+02						
33	12	60.0	1419	2	N70819	Sequence encoding chi
1.30e+02						
c 34	12	60.0	1431	2	N70264	Sequence encoding alp
1.30e+02						
c 35	12	60.0	1619	12	Q71364	Expression cassette c
1.30e+02						
c 36	12	60.0	1754	12	Q71365	Expression cassette c
1.30e+02						
c 37	12	60.0	2634	15	Q87841	Human neuronal calciu
1.30e+02						
c 38	12	60.0	2712	15	Q87836	Human neuronal calciu
1.30e+02						
c 39	12	60.0	2941	9	Q52490	Helminth aminopeptida
1.30e+02						
c 40	12	60.0	2970	15	Q87835	Human neuronal calciu
1.30e+02						
41	12	60.0	2992	11	Q65572	Human liver hap cDNA.
1.30e+02						
c 42	12	60.0	3423	15	Q87798	XAP-1 DNA, part of th
1.30e+02						
43	12	60.0	5255	3	Q25448	Marek Disease Virus g
1.30e+02						
c 44	12	60.0	7859	7	Q44265	pSW6 for expression o
1.30e+02						
c 45	12	60.0	9215	2	Q10203	Sequence of simian im
1.30e+02						

RESULT 1
 ID Q47282 standard; DNA; 74 BP.
 AC Q47282;
 DT 31-JAN-1994 (first entry)
 DE HBV ORF6 sequence isolation primer #1.
 KW ORF6; coding region; hepatitis B; virus; HBV; plasmid; pCRII;
 KW PCR; isolation; HCV; NANBH; non-A, non-B hepatitis; primers;
 mutation;
 KW cytotoxic T-lymphocyte; CTL; pCRIIHBORF6; hepatitis C;
 infection;
 KW hepatocellular carcinomas; class-I; ss.
 OS Synthetic.
 PN WO9315207-A.
 PD 05-AUG-1993.
 PF 04-FEB-1993; U01009.
 PR 04-FEB-1992; US-830417.
 PA (VIAG-) VIAGENE INC.
 PI Chang SMW, Jolly DJ, Lee WT, O'Dea J, Townsend K;
 DR WPI; 93-258682/32.
 PT Treatment of hepatitis B and C, and associated carcinoma(s) -
 PT using a vector construct directing the expression of part of
 PT hepatitis B or C antigen
 PS Example 2K; Page 38; 110pp; English.
 CC The sequences given in Q47282-83 are primers which were used
 in the
 CC isolation of the ORF6 coding region of hepatitis B virus
 (HBV).
 CC The DNA which was used as a template in the PCR reaction, was
 the
 CC plasmid pAM6. The first primer corresponds to nucleotides
 1844-1788
 CC of the adw strain of HBV. The second primer corresponds to
 the anti-
 CC sense nucleotide sequence 1188-1240. A 687 bp amplification
 product
 CC was produced. This oligomer was ligated into the pCRII vector
 and
 CC designated pCRIIHB-ORF6. The isolated HBV ORF6 region may be
 CC used in a method to induce potent class-I restricted
 protective and
 CC therapeutic cytotoxic T-lymphocyte (CTL) response, and a
 humoral
 CC response for the treatment of hepatitis B and C infections, as
 well
 CC as hepatocellular carcinomas.
 SQ Sequence 74 BP; 19 A; 16 C; 23 G; 16 T;

 Query Match 100.0%; Score 20; DB 8; Length 74;
 Best Local Similarity 100.0%; Pred. No. 2.24e-03;
 Matches 20; Conservative 0; Mismatches 0; Indels 0;
 Gaps 0;

```
Db      53 ggtgcgcagaccaatttatg 72
        ||||||||||||||||
Qy      1  GGTGCGCAGACCAATTTATG 20
```

RESULT 2
 ID N80943 standard; DNA; 750 BP.
 AC N80943;
 DT 19-NOV-1990 (first entry)
 DE HBV core gene of plasmid pHBV-8.
 KW Hepatitis B core antigen; virus; vaccine; immunoassay; ss.
 OS Hepatitis B virus.
 FH Key Location/Qualifiers
 FT CDS 31..675
 FT /*tag= a
 FT /product=HBcAg
 PN EP-272483-A.
 PD 29-JUN-1988.
 PF 25-NOV-1987; 117370.
 PR 19-DEC-1986; US-944645.
 PA (ABBO) Abbott Laboratories.
 PI Andersen PR, Muushahwar IK, Mimms LT, Staller JM;
 DR WPI; 88-176639/26.
 DR P-PSDB; P80961.
 PT Polynucleotide encoding HBeAg and HBcAg immunoreactive polypeptide
 PT - useful in immunoassays, for raising antibodies and as vaccine
 PT prods.
 PS Disclosure; p; English.
 CC The cloned HBV DNA can be used to engineer plasmids for HBcAg
 CC synthesis in bacteria. The DNA may be fused to a gene for beta
 CC galactosidase. The recombinant protein can be used for immuno-
 CC assays, to raise antibodies, and in vaccines.
 CC See also N82265 and 66.
 SQ Sequence 750 BP; 176 A; 192 C; 160 G; 222 T;

Query Match 100.0%; Score 20; DB 1; Length 750;
 Best Local Similarity 100.0%; Pred. No. 2.24e-03;
 Matches 20; Conservative 0; Mismatches 0; Indels 0;
 Gaps 0;

Db 5 cataaattggtctgcgacc 24
 |||||
 Cp 20 CATAAATTGGTCTGCGCACC 1

*provides whole
 sequence
 of core.*
~~order ASAP~~
*don't really need
 in order to finish*

RESULT 3
ID N93072 standard; DNA; 2342 BP.
AC N93072;
DT 02-JUL-1990 (first entry)

DE Sequence encoding S1, S2 and S-genes of hepatitis B.
 KW Hepatitis B; vaccine; pre-S component; ds.
 OS Hepatitis B virus.
 FH Key / Location/Qualifiers
 FT CDS 12..382
 FT /*tag= a
 FT /label=S1 encoding sequence.
 FT CDS 383..500
 FT /*tag= b
 FT /label=S2 encoding sequence.
 FT CDS 501..2342
 FT /*tag= c
 FT /label=S encoding sequence.
 PN WO8810301-A.
 PD 29-DEC-1988.
 PF 22-JUN-1988; 00551.
 PR 22-JUN-1987; EP-108914.
 PR 22-JUN-1987; EP-108915.
 PA (MCCO-) McCormick & Jones.
 PI Thoma HA.;
 DR WPI; 89-023845/03.
 PT New recombinant DNA encoding hepatitis B pre-S epitope(s) -
 PT and a peptide forming particles when secreted, useful in
 PT vaccines providing long lasting protection.
 PS Disclosure; pp; English.
 CC A portion of the pre-S1, pre-S2 or S-gene is used as an
 epitope, being
 CC attached to a 10nm or larger subunit (eg. HBV core antigen)
 providing a
 CC longer lasting and more succesful vaccine to the disease.
 SQ Sequence 2342 BP; 493 A; 661 C; 524 G; 664 T;

Query Match 100.0%; Score 20; DB 1; Length 2342;
 Best Local Similarity 100.0%; Pred. No. 2.24e-03;
 Matches 20; Conservative 0; Mismatches 0; Indels 0;
 Gaps 0;

Db 2135 cataaattggtctgcgcacc 2154
 |||||
 Cp 20 CATAAATTGGTCTGCGCACC 1

*looks like another
200 bp would
be matched.*

RESULT 8
 LOCUS HUMUT1286 427 bp DNA STS
 27-MAY-1993
 DEFINITION Human chromosome 3 STS UT1286.
 ACCESSION L16381
 KEYWORDS PCR primer; STS sequence; microsatellite marker;
 microsatellite repeat; repeat polymorphism; sequence
 tagged site;
 tetranucleotide repeat.
 SOURCE Homo sapiens DNA.
 ORGANISM Homo sapiens
 Eukaryota; Animalia; Chordata; Vertebrata; Mammalia;
 Theria;
 Eutheria; Primates; Haplorhini; Catarrhini; Hominidae.
 REFERENCE 1 (bases 1 to 427)
 AUTHORS Gerken,S.C., Matsunami,N., Lawrence,E., Carlson,M.,
 Moore,M.,
 Ballard,L., Melis,R., Robertson,M., Bradley,P.,
 Elsner,T.,
 Tingey,A., Rodriguez,P., Albertsen,H., Lalouel,J.-M.
 and White,R.
 TITLE Genetic and physical mapping of simple sequence repeat
 containing
 sequence tagged sites from the human genome
 JOURNAL Unpublished (1993) See COMMENT for author address
 COMMENT Submitted by: Utah Center for Human Genome Research
 University of
 Utah, Dept. of Human Genetics
 2160 Eccles Institute of Human Genetics
 Salt Lake City, UT 84112
 e-mail: sts@corona.med.utah.edu

Primer A: GACCAATTTGCAGGATACCG
 Primer B: AGGTGGAAATCTCACAGGTG
 32P-label: B Primer
 PCR Profile:
 Initial Denaturation: 94C 300sec
 PCR Cycles: 5
 Denaturation: 94C 10sec
 Annealing: 60C 10sec
 Extension: 72C 20sec
 Mg++: 1mM
 Gel: Acrylamide 7%, Formamide 32%, Urea 34%
 Alleles: 5.

NCBI gi: 307623
 FEATURES Location/Qualifiers
 source 1..427
 /organism="Homo sapiens"
 /sequenced_mol="DNA"
 STS 68..402
 /standard_name="STS UT1286"
 /map="3"
 primer_bind 68..87
 primer_bind complement(383..402)
 BASE COUNT 156 a 43 c 91 g 132 t 5 others
 ORIGIN

Query Match 70.0%; Score 14; DB 94; Length 427;
 Best Local Similarity 93.8%; Pred. No. 7.61e-03;
 Matches 15; Conservative 0; Mismatches 1; Indels 0;
 Gaps 0;

Db 61 gtgggcagaccaatTT 76
 ||| |||||
 Qy 2 GTGCGCAGACCAATTT 17

oligo: SEA 10 No 1
inoperability?
- primer would also
recognize region
of human chromosome 3

RESULT 6
 LOCUS R34410 358 bp mRNA EST
 02-MAY-1995
 DEFINITION yg57d03.r1 Homo sapiens cDNA clone 37094 5'.
 ACCESSION R34410
 KEYWORDS EST.
 SOURCE human clone=37094 library=Soares infant brain 1NIB
 vector=Lafmid BA
 host=DH10B (ampicillin resistant) primer=M13RP1
 Rsite1=Not I
 Rsite2=Hind III Whole brain from a 73 days post natal
 female. 1st strand cDNA was primed with a Not I - oligo(dT) primer
 [5' AACTGGAAGAATTCGCGCCGCGAGGAATTTTTTTTTTTTTTTTTT 3'];
 double-stranded
 cDNA was ligated to Hind III adaptors (Pharmacia),
 digested with
 Not I and directionally cloned into the Not I and Hind
 III sites of
 the Lafmid BA vector. Library went through one round of
 normalization. Library constructed by Bento Soares and

M.Fatima

Bonaldo.
ORGANISM Homo sapiens
Eucaryotae; Metazoa; Chordata; Vertebrata;
Gnathostomata; Mammalia;
Eutheria; Primates; Catarrhini; Hominidae; Homo.

REFERENCE 1 (bases 1 to 358)

AUTHORS Hillier,L., Clark,N., Dubuque,T., Elliston,K.,
Hawkins,M.,

Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G.,
Marra,M.,

Parsons,J., Rifkin,L., Rohlfing,T., Soares,M., Tan,F.,
Trevaskis,E., Waterston,R., Williamson,A., Wohldmann,P.

and

Wilson,R.

TITLE The WashU-Merck EST Project

JOURNAL Unpublished (1995)

COMMENT

GDB: G00-409-595

Contact: Wilson RK

WashU-Merck EST Project

Washington University School of Medicine

4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108

Tel: 314 286 1800

Fax: 314 286 1810

Email: est@watson.wustl.edu

High quality sequence stops: 303

Source: IMAGE Consortium, LLNL

This clone is available royalty-free through LLNL ;

contact the

IMAGE Consortium (info@image.llnl.gov) for further

information.

NCBI gi: 791311
FEATURES Location/Qualifiers
source 1..358
/organism="Homo sapiens"
/clone="37094"
/note="human"

BASE COUNT 89 a 94 c 85 g 89 t 1 others
ORIGIN

Query Match 70.0%; Score 14; DB 43; Length 358;
Best Local Similarity 85.0%; Pred. No. 7.61e-03;
Matches 17; Conservative 0; Mismatches 3; Indels 0;
Gaps 0;

Db 39 caaaaattggcctgggcacc 58

|| ||||| ||| |||||

Cp 20 CATAAATTGGTCTGCGCACC 1

RESULT
LOCUS

7

R80606

411 bp

mRNA

EST

09-JUN-1995

DEFINITION yi96cl2.r1 Homo sapiens cDNA clone 147094 5' similar to contains

THR repetitive element ;.

ACCESSION R80606

KEYWORDS EST.

SOURCE human clone=147094 library=Soares placenta Nb2HP vector=pT7T3D

(Pharmacia) with a modified polylinker host=DH10B (ampicillin

resistant) primer=M13RP1 Rsite1=Not I Rsite2=Eco RI Female placenta

obtained at birth (full term). 1st strand cDNA was primed with a

Not I - oligo(dT) primer [5' AACTGGAAGAATTTCGCGCCGCAGGAATTTTTTTTTTTTTTTTTT 3'],

double-stranded

cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not

I and cloned into the Not I and Eco RI sites of the modified pT7T3

vector. Library went through one round of normalization. Library

constructed by Bento Soares and M.Fatima Bonaldo.

ORGANISM Homo sapiens

Eukaryotae; Metazoa; Eumetazoa; Bilateria; Coelomata; Deuterostomia; Chordata; Vertebrata; Gnathostomata;

Osteichthyes;

Sarcopterygii; Choanata; Tetrapoda; Amniota; Mammalia;

Theria;

Eutheria; Archonta; Primates; Catarrhini; Hominidae;

Homo.

REFERENCE 1 (bases 1 to 411)

AUTHORS Hillier,L., Clark,N., Dubuque,T., Elliston,K., Hawkins,M.,

Marra,M., Holman,M., Hultman,M., Kucaba,T., Le,M., Lennon,G.,

Parsons,J., Rifkin,L., Rohlfing,T., Soares,M., Tan,F., Trevaskis,E., Waterston,R., Williamson,A., Wohldmann,P.

and

Wilson,R.

TITLE The WashU-Merck EST Project

JOURNAL Unpublished (1995)

COMMENT

Contact: Wilson RK

WashU-Merck EST Project

Washington University School of Medicine

4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108

Tel: 314 286 1800

Fax: 314 286 1810

Email: est@watson.wustl.edu

High quality sequence stops: 300

Source: IMAGE Consortium, LLNL

This clone is available royalty-free through LLNL ;

contact the
IMAGE Consortium (info@image.llnl.gov) for further
information.

NCBI gi: 856887
FEATURES Location/Qualifiers
source 1..411
/organism="Homo sapiens"
/clone="147094"
/note="human"

BASE COUNT 143 a 55 c 74 g 137 t 2 others
ORIGIN

Query Match 70.0%; Score 14; DB 56; Length 411;
Best Local Similarity 88.9%; Pred. No. 7.61e-03;
Matches 16; Conservative 0; Mismatches 2; Indels 0;
Gaps 0;

Db 68 tgcacagatcaatttatg 85
||| |||| |||||||||
Qy 3 TGC GCAGACCAATTTATG 20

RESULT 1
LOCUS T67616 356 bp mRNA EST
22-FEB-1995
DEFINITION yc26g02.r1 Homo sapiens cDNA clone 81842 5' similar to
contains L1
repetitive element ;.
ACCESSION T67616

KEYWORDS EST.
 SOURCE human clone=81842 library=Stratagene liver (#937224)
 vector=pBluescript SK host=SOLR cells (kanamycin
 resistant)
 primer=M13RP1 Rsite1=EcoRI Rsite2=XhoI Cloned
 unidirectionally.
 Primer: Oligo dT. Hepatectomy from normal 49 year old
 male caucasian. Average insert size: 1.1 kb; Uni-ZAP XR
 Vector; 5' adaptor sequence: 5'-GAATTCGGCACGAG-3'; 3' adaptor
 sequence: 5'-CTCGAGTTTTTTTTTTTTTTTTTTT-3'.
 ORGANISM Homo sapiens
 Eucaryotae; Metazoa; Chordata; Vertebrata;
 Gnathostomata; Mammalia;
 Eutheria; Primates; Catarrhini; Hominidae; Homo.
 REFERENCE 1 (bases 1 to 356)
 AUTHORS Hillier, L., Clark, N., Dubuque, T., Elliston, K.,
 Hawkins, M., Holman, M., Hultman, M., Kucaba, T., Le, M., Lennon, G.,
 Marra, M., Parsons, J., Rifkin, L., Rohlfsing, T., Tan, F.,
 Trevaskis, E., Waterston, R., Williamson, A., Wohldmann, P. and Wilson, R.
 TITLE WashU-Merck EST Project
 JOURNAL Unpublished (1995)
 COMMENT
 Contact: Wilson RK
 WashU-Merck EST Project
 Washington University School of Medicine
 4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
 Tel: 314 286 1800
 Fax: 314 286 1810
 Email: est@watson.wustl.edu
 High quality sequence stops: 271
 Source: IMAGE Consortium, LLNL
 This clone is available royalty-free through LLNL ;
 contact the IMAGE Consortium (info@image.llnl.gov) for further
 information.
 NCBI gi: 678764
 FEATURES Location/Qualifiers
 source 1..356
 /organism="Homo sapiens"
 /clone="81842"
 /note="human"
 BASE COUNT 77 a 74 c 60 g 142 t 3 others
 ORIGIN

Query Match 100.0%; Score 12; DB 80; Length 356;
 Best Local Similarity 100.0%; Pred. No. 4.61e-03;
 Matches 12; Conservative 0; Mismatches 0; Indels 0;

could
 this
 guy
 have
 had?
 HBV?

Gaps 0;

Db 165 tcgacccttata 176

|||||||

Cp 12 TCGACCCTTATA 1

complementary ✓

Title: >US-08-467-397-18
Description: (1-12) from US08467397.seq
Perfect Score: 12
N.A. Sequence: 1 TATAAGGGTCGA 12
Comp: ATATTCCCAGCT

RESULT 1
 ID Q38441 standard; DNA; 21 BP.
 AC Q38441;
 DT 08-JUL-1993 (first entry)
 DE Antisense oligomer hybridising to HBV poly A site.
 KW Hepatitis B virus; polyadenylation; targetting; cell-specific;
 KW complex; oncogenes; pathogen; parasite; ss.
 OS Synthetic.
 PN WO9304701-A.
 PD 18-MAR-1993.
 PF 04-SEP-1992; U07339.
 PR 05-SEP-1991; US-755083.
 PR 04-NOV-1991; US-788119.
 PR 03-APR-1992; US-864003.
 PA (UYCO-) UNIV CONNECTICUT.
 PI Wu GY;
 DR WPI; 93-100661/12.
 PT Soluble mol. complex for targetting delivery of poly- or
 PT oligo-nucleotide(s) to cells - includes carrier comprising
 PT cell-specific binding agent and poly- or
 oligo-nucleotide-binding
 PT agent
 PS Claim 38; Page 12; 44pp; English.
 CC The sequence corresponds to nucleotides 1903-1923 of the
 Hepatitis B
 CC viral genome (the polyadenylation site). The oligonucleotide
 was used
 CC to specifically hybridise with HBV in a targettable, soluble
 DNA soln.,
 CC to form a stable complex in soln.
 CC See also Q38442.
 SQ Sequence 21 BP; 5 A; 3 C; 5 G; 8 T;

order
ASAP

Query Match 100.0%; Score 12; DB 6; Length 21;
 Best Local Similarity 100.0%; Pred. No. 9.40e+00;
 Matches 12; Conservative 0; Mismatches 0; Indels 0;
 Gaps 0;

Db 3 tataagggtcga 14
 |||||
 Qy 1 TATAAGGGTCGA 12

encompasses SEQ ID NO 18, 16
+ also most of HBV 94 (SEQ ID NO 17)
" " " HBV 92 (SEQ ID NO 15)

PRINT OUT OF SEQUENCES IN US 08/467397

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1

```
; Sequence 1, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerneir, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-1
GGTCCGACACCAATTATG1
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May 4 07:18 /home/johnf/weiss467/US08467397 seq

2

```
; Sequence 2, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerneir, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 19 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-2
CATGTGCTGCTGCCAGAT
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6

```
; Sequence 3, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Robert, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mille, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Robert, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-3
GAAAAATTGATGCTGCTG1
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; Sequence 4, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Robert, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mille, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Robert, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-4
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/home/john/weiss467/US08467397 seq

5

```
/ Sequence 5, Application US/08467397
/ GENERAL INFORMATION:
/ APPLICANT: Frank, Bruce L.
/ APPLICANT: Roberts, Peter C.
/ APPLICANT: Goodchild, John
/ APPLICANT: Craig, J. Charles
/ APPLICANT: Mills, John S.
/ APPLICANT: Slade, Andrew
/ APPLICANT: Roberts, Noel A.
/ APPLICANT: Jupp, Raymond
/ TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
/ TITLE OF INVENTION: B VIRUS
/ NUMBER OF SEQUENCES: 56
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Lappin & Kuerner
/ STREET: 200 State Street
/ CITY: Boston
/ STATE: MA
/ COUNTRY: USA
/ ZIP: 02109
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: PatentIn Release #1.0, Version #1.25
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/467,397
/ FILING DATE:
/ CLASSIFICATION: 435
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Kerner, Ann-Louise
/ REGISTRATION NUMBER: 33,523
/ REFERENCE/DOCKET NUMBER: HYZ-041
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 617-330-1300
/ TELEFAX: 617-330-1311
/ INFORMATION FOR SEQ ID NO: 5:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 20 base pairs
/ TYPE: nucleic acid
/ STRANDEDNESS: single
/ TOPOLOGY: linear
/ MOLECULE TYPE: DNA
/ HYPOTHETICAL: NO
/ ANTI-SENSE: YES
/ US-08-467-397-5
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May 4 07:18

/home/john/weiss467/US08467397 seq

6

```
/ Sequence 6, Application US/08467397
/ GENERAL INFORMATION:
/ APPLICANT: Frank, Bruce L.
/ APPLICANT: Roberts, Peter C.
/ APPLICANT: Goodchild, John
/ APPLICANT: Craig, J. Charles
/ APPLICANT: Mills, John S.
/ APPLICANT: Slade, Andrew
/ APPLICANT: Roberts, Noel A.
/ APPLICANT: Jupp, Raymond
/ TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
/ TITLE OF INVENTION: B VIRUS
/ NUMBER OF SEQUENCES: 56
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Lappin & Kuerner
/ STREET: 200 State Street
/ CITY: Boston
/ STATE: MA
/ COUNTRY: USA
/ ZIP: 02109
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: PatentIn Release #1.0, Version #1.25
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/467,397
/ FILING DATE:
/ CLASSIFICATION: 435
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Kerner, Ann-Louise
/ REGISTRATION NUMBER: 33,523
/ REFERENCE/DOCKET NUMBER: HYZ-041
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 617-330-1300
/ TELEFAX: 617-330-1311
/ INFORMATION FOR SEQ ID NO: 6:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 12 base pairs
/ TYPE: nucleic acid
/ STRANDEDNESS: single
/ TOPOLOGY: linear
/ MOLECULE TYPE: DNA
/ HYPOTHETICAL: NO
/ ANTI-SENSE: YES
/ US-08-467-397-6
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```
; Sequence 7, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 7:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-7
AGACATGATTAGGACAGCTT
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```
; Sequence 8, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 8:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 30 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-8
GACATGAACAAGAGATGATTAGGACAGCTT
```

```
Sequence 9, Application US/08467397
GENERAL INFORMATION:
APPLICANT: Frank, Bruce L.
APPLICANT: Roberts, Peter C.
APPLICANT: Goodchild, John
APPLICANT: Craig, J. Charles
APPLICANT: Mills, John S.
APPLICANT: Slade, Andrew
APPLICANT: Roberts, Noel A.
APPLICANT: Jupp, Raymond
TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
TITLE OF INVENTION: B VIRUS
NUMBER OF SEQUENCES: 56
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lappin & Kusner
STREET: 200 State Street
CITY: Boston
STATE: MA
COUNTRY: USA
ZIP: 02109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/467,397
FILING DATE:
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Kerner, Ann-Louise
REGISTRATION NUMBER: 33,523
REFERENCE/DOCKET NUMBER: HY2-041
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617-330-1300
TELEFAX: 617-330-1311
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
LENGTH: 20 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: Linear
MOLECULE TYPE: DNA
HYPOTHETICAL: NO
ANTI-SENSE: YES
US-08-467-397-9
GACATGTACAGATCATTT
```

```
Sequence 10, Application US/08467397
GENERAL INFORMATION:
APPLICANT: Frank, Bruce L.
APPLICANT: Roberts, Peter C.
APPLICANT: Goodchild, John
APPLICANT: Craig, J. Charles
APPLICANT: Mills, John S.
APPLICANT: Slade, Andrew
APPLICANT: Roberts, Noel A.
APPLICANT: Jupp, Raymond
TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
TITLE OF INVENTION: B VIRUS
NUMBER OF SEQUENCES: 56
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lappin & Kusner
STREET: 200 State Street
CITY: Boston
STATE: MA
COUNTRY: USA
ZIP: 02109
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/467,397
FILING DATE:
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Kerner, Ann-Louise
REGISTRATION NUMBER: 33,523
REFERENCE/DOCKET NUMBER: HY2-041
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617-330-1300
TELEFAX: 617-330-1311
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
LENGTH: 20 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: Linear
MOLECULE TYPE: DNA
HYPOTHETICAL: NO
ANTI-SENSE: YES
US-08-467-397-10
GTAGCATGACAGATCATTT
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```
; Sequence 11, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusmer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 11:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-11
TTGAGCGTTGACGTGACG1
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```
; Sequence 12, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusmer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 12:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-12
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; Sequence 13, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 13:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-13
AGCCACCAGGACAGCTT1
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```
; Sequence 14, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 14:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-14
TCGATGTCATGCCCAAG1
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; Sequence 15, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Robert, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Robert, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusmer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 15:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHEICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-15
TTAAGGTCATGTCATCCCT
```

```
; Sequence 16, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Robert, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Robert, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusmer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 16:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHEICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-16
TTATAAGGTCATGTCATCTT
```

```
; Sequence 17, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 17:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 27 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-17
AAATCTTATAGGCTCGATGTCAT1
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; Sequence 18, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 18:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 12 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-18
TATAGGCTCGA1
```

```
; Sequence 19, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusmer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HYZ-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 19:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-19
AAATCTTATAGGCGTCA1
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; Sequence 20, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusmer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HYZ-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 20:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-20
GTATCTAGAGATCTGCTAC1
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; Sequence 21, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusmer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 21:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-21
GAGCGTCTAGAGATCTCG1
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; Sequence 22, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusmer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 22:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-22
GAGCGTCTCTAGAGATCT1
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May 4 07:18

/home/john/weiss4671/US08467397.seq

23

```
; Sequence 23, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 23:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-23
GAGCTAGCGCGTCTACG1
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May 4 07:18

/home/john/weiss4671/US08467397.seq

24

```
; Sequence 24, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 24:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-24
ATACAGACTGAGCGGTATT1
```

```
; Sequence 25, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 25:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-25
TCCGATACAGACTGAGCT1
```

```
; Sequence 26, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 26:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-26
AGGCTTCCGATACAGACT1
```

```
; Sequence 27, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 27:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-27
ACATCTCTACGAGACTCTAI
```

```
; Sequence 28, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 28:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-28
GCAGTATGCTGAGGTGACCAI
```

```
; Sequence 29, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuemer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 29:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-29
GAGTGCATATGCTGAGGTG1
```

```
; Sequence 30, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuemer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 30:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-30
TGCGTGAATGATATGCTG1
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; Sequence 31, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HYZ-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 31:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-31
TTGCTTCCTCGAGTCAGTA1
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```
; Sequence 32, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HYZ-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 32:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-32
TAAAGGTCAAGAGATGATT1
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; Sequence 33, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuerner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 33:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-33
AGAGTATTTAAGGTCGAT
```

```
; Sequence 34, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuerner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 34:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-34
TAAAGGTCGAAGCAGAGCTT
```

```
; Sequence 35, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuemer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 35:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-35
AGGAGAGGTTAAGGTCAT
```

```
; Sequence 36, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuemer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 36:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 24 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-36
TATRAGGCTGAGGAGGTCAT
```

```
; Sequence 37, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 37:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 24 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-37
AGCGAGGATGATTAAGGTCGA1
```

```
; Sequence 38, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 38:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 30 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-38
AGAGATGATTAGCGAGGTTAAGGTCGA1
```

```
/ Sequence 39, Application US/08467397
/ GENERAL INFORMATION:
/ APPLICANT: Frank, Bruce L.
/ APPLICANT: Roberts, Peter C.
/ APPLICANT: Goodchild, John
/ APPLICANT: Craig, J. Charles
/ APPLICANT: Mills, John S.
/ APPLICANT: Slade, Andrew
/ APPLICANT: Roberts, Noel A.
/ APPLICANT: Jupp, Raymond
/ TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
/ TITLE OF INVENTION: B VIRUS
/ NUMBER OF SEQUENCES: 56
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Lappin & Kusner
/ STREET: 200 State Street
/ CITY: Boston
/ STATE: MA
/ COUNTRY: USA
/ ZIP: 02109
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: Patent In Release #1.0, Version #1.25
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/467,397
/ FILING DATE:
/ CLASSIFICATION: 435
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Kerner, Ann-Louise
/ REGISTRATION NUMBER: 33,523
/ REFERENCE/DOCKET NUMBER: HY2-041
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 617-330-1300
/ TELEFAX: 617-330-1311
/ INFORMATION FOR SEQ ID NO: 39:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 30 base pairs
/ TYPE: nucleic acid
/ STRANDEDNESS: single
/ TOPOLOGY: linear
/ MOLECULE TYPE: DNA
/ HYPOTHETICAL: NO
/ ANTI-SENSE: YES
/ US-08-467-397-39
GACATGACACAGATGATTTAAGGTGCA1
```

```
/ Sequence 40, Application US/08467397
/ GENERAL INFORMATION:
/ APPLICANT: Frank, Bruce L.
/ APPLICANT: Roberts, Peter C.
/ APPLICANT: Goodchild, John
/ APPLICANT: Craig, J. Charles
/ APPLICANT: Mills, John S.
/ APPLICANT: Slade, Andrew
/ APPLICANT: Roberts, Noel A.
/ APPLICANT: Jupp, Raymond
/ TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
/ TITLE OF INVENTION: B VIRUS
/ NUMBER OF SEQUENCES: 56
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Lappin & Kusner
/ STREET: 200 State Street
/ CITY: Boston
/ STATE: MA
/ COUNTRY: USA
/ ZIP: 02109
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: Patent In Release #1.0, Version #1.25
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/467,397
/ FILING DATE:
/ CLASSIFICATION: 435
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Kerner, Ann-Louise
/ REGISTRATION NUMBER: 33,523
/ REFERENCE/DOCKET NUMBER: HY2-041
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 617-330-1300
/ TELEFAX: 617-330-1311
/ INFORMATION FOR SEQ ID NO: 40:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 30 base pairs
/ TYPE: nucleic acid
/ STRANDEDNESS: single
/ TOPOLOGY: linear
/ MOLECULE TYPE: DNA
/ HYPOTHETICAL: NO
/ ANTI-SENSE: YES
/ US-08-467-397-40
AGAGATGATTTTAAGGTCATGTCATGCC1
```

```
; Sequence 41, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuemer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 41:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 30 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-41
AGCGAGGTTAGCGTCATGTCATGCC1
```

```
; Sequence 42, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuemer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 42:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-42
GGCATTGGTGCTATAG1
```

```
; Sequence 43, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuemer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 43:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-43
GATAGGGCAATTGGTGTCT
```

```
; Sequence 44, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuemer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 44:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-44
GTGTGATAGCATAGGGGCATT
```

```
/ Sequence 45, Application US/08467397
/ GENERAL INFORMATION:
/ APPLICANT: Frank, Bruce L.
/ APPLICANT: Roberts, Peter C.
/ APPLICANT: Goodchild, John
/ APPLICANT: Craig, J. Charles
/ APPLICANT: Mills, John S.
/ APPLICANT: Slade, Andrew
/ APPLICANT: Roberts, Noel A.
/ APPLICANT: Jupp, Raymond
/ TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
/ TITLE OF INVENTION: B VIRUS
/ NUMBER OF SEQUENCES: 56
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Lappin & Kusmer
/ STREET: 200 State Street
/ CITY: Boston
/ STATE: MA
/ COUNTRY: USA
/ ZIP: 02109
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: PatentIn Release #1.0, Version #1.25
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/467,397
/ FILING DATE:
/ CLASSIFICATION: 435
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Kerner, Ann-Louise
/ REGISTRATION NUMBER: 33,523
/ REFERENCE/DOCKET NUMBER: HY2-041
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 617-330-1300
/ TELEFAX: 617-330-1311
/ INFORMATION FOR SEQ ID NO: 45:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 20 base pairs
/ TYPE: nucleic acid
/ STRANDEDNESS: single
/ TOPOLOGY: linear
/ MOLECULE TYPE: DNA
/ HYPOTHETICAL: NO
/ ANTI-SENSE: YES
/ US-08-467-397-45
ACCGAGGACAGCTTGAGC1
```

```
/ Sequence 46, Application US/08467397
/ GENERAL INFORMATION:
/ APPLICANT: Frank, Bruce L.
/ APPLICANT: Roberts, Peter C.
/ APPLICANT: Goodchild, John
/ APPLICANT: Craig, J. Charles
/ APPLICANT: Mills, John S.
/ APPLICANT: Slade, Andrew
/ APPLICANT: Roberts, Noel A.
/ APPLICANT: Jupp, Raymond
/ TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
/ TITLE OF INVENTION: B VIRUS
/ NUMBER OF SEQUENCES: 56
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Lappin & Kusmer
/ STREET: 200 State Street
/ CITY: Boston
/ STATE: MA
/ COUNTRY: USA
/ ZIP: 02109
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: PatentIn Release #1.0, Version #1.25
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/467,397
/ FILING DATE:
/ CLASSIFICATION: 435
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Kerner, Ann-Louise
/ REGISTRATION NUMBER: 33,523
/ REFERENCE/DOCKET NUMBER: HY2-041
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 617-330-1300
/ TELEFAX: 617-330-1311
/ INFORMATION FOR SEQ ID NO: 46:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 20 base pairs
/ TYPE: nucleic acid
/ STRANDEDNESS: single
/ TOPOLOGY: linear
/ MOLECULE TYPE: DNA
/ HYPOTHETICAL: NO
/ ANTI-SENSE: YES
/ US-08-467-397-46
GACAGGGCATTGTGCTC1
```



```
; Sequence 47, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuerner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kernef, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HYZ-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 47:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-47
GATAGGGCCTTGTGCTCT
```

```
; Sequence 48, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kuerner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kernef, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HYZ-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 48:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-48
GATAGGGCATTGTGCTCT
```

```
; Sequence 49, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 49:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-49
GACAGGGCCTTGCTCTCTC1
```

```
; Sequence 50, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 50:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 20 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: YES
; US-08-467-397-50
ATGTTTGGCGTTCATC1
```

```
; Sequence 51, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusmer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HYZ-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 51:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 21 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: NO
; US-08-467-397-51
TGCTGGGGGAATTAATGACTT1
```

```
; Sequence 52, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusmer
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patent In Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HYZ-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 52:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 25 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: NO
; US-08-467-397-52
GGAGTGGCAATCCACATCCGAAG1
```

```
/ Sequence 53, Application US/08467397
/ GENERAL INFORMATION:
/ APPLICANT: Frank, Bruce L.
/ APPLICANT: Roberte, Peter C.
/ APPLICANT: Goodchild, John
/ APPLICANT: Craig, J. Charles
/ APPLICANT: Mills, John S.
/ APPLICANT: Slade, Andrew
/ APPLICANT: Roberte, Noel A.
/ APPLICANT: Jupp, Raymond
/ TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
/ TITLE OF INVENTION: B VIRUS
/ NUMBER OF SEQUENCES: 56
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Lappin & Kusner
/ STREET: 200 State Street
/ CITY: Boston
/ STATE: MA
/ COUNTRY: USA
/ ZIP: 02109
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: Patent In Release #1.0, Version #1.25
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/467,397
/ FILING DATE:
/ CLASSIFICATION: 435
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Kerner, Ann-Louise
/ REGISTRATION NUMBER: 33,523
/ REFERENCE/DOCKET NUMBER: HY2-041
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 617-330-1300
/ TELEFAX: 617-330-1311
/ INFORMATION FOR SEQ ID NO: 53:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 10 base pairs
/ TYPE: nucleic acid
/ STRANDEDNESS: single
/ TOPOLOGY: Linear
/ MOLECULE TYPE: DNA
/ HYPOTHETICAL: NO
/ ANTI-SENSE: YES
/ US-08-467-397-53
TAAAGGTCA1
```

```
/ Sequence 54, Application US/08467397
/ GENERAL INFORMATION:
/ APPLICANT: Frank, Bruce L.
/ APPLICANT: Roberte, Peter C.
/ APPLICANT: Goodchild, John
/ APPLICANT: Craig, J. Charles
/ APPLICANT: Mills, John S.
/ APPLICANT: Slade, Andrew
/ APPLICANT: Roberte, Noel A.
/ APPLICANT: Jupp, Raymond
/ TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
/ TITLE OF INVENTION: B VIRUS
/ NUMBER OF SEQUENCES: 56
/ CORRESPONDENCE ADDRESS:
/ ADDRESSEE: Lappin & Kusner
/ STREET: 200 State Street
/ CITY: Boston
/ STATE: MA
/ COUNTRY: USA
/ ZIP: 02109
/ COMPUTER READABLE FORM:
/ MEDIUM TYPE: Floppy disk
/ COMPUTER: IBM PC compatible
/ OPERATING SYSTEM: PC-DOS/MS-DOS
/ SOFTWARE: Patent In Release #1.0, Version #1.25
/ CURRENT APPLICATION DATA:
/ APPLICATION NUMBER: US/08/467,397
/ FILING DATE:
/ CLASSIFICATION: 435
/ ATTORNEY/AGENT INFORMATION:
/ NAME: Kerner, Ann-Louise
/ REGISTRATION NUMBER: 33,523
/ REFERENCE/DOCKET NUMBER: HY2-041
/ TELECOMMUNICATION INFORMATION:
/ TELEPHONE: 617-330-1300
/ TELEFAX: 617-330-1311
/ INFORMATION FOR SEQ ID NO: 54:
/ SEQUENCE CHARACTERISTICS:
/ LENGTH: 10 base pairs
/ TYPE: nucleic acid
/ STRANDEDNESS: single
/ TOPOLOGY: Linear
/ MOLECULE TYPE: DNA
/ HYPOTHETICAL: NO
/ ANTI-SENSE: YES
/ US-08-467-397-54
AGGCAGAGGT1
```

```
; Sequence 55, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 55:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 36 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: NO
; US-08-467-397-55
ATATTGCACGAATTACGTTATGACCACTAAATG1
```

```
; Sequence 56, Application US/08467397
; GENERAL INFORMATION:
; APPLICANT: Frank, Bruce L.
; APPLICANT: Roberts, Peter C.
; APPLICANT: Goodchild, John
; APPLICANT: Craig, J. Charles
; APPLICANT: Mills, John S.
; APPLICANT: Slade, Andrew
; APPLICANT: Roberts, Noel A.
; APPLICANT: Jupp, Raymond
; TITLE OF INVENTION: OLIGONUCLEOTIDES SPECIFIC FOR HEPATITIS
; TITLE OF INVENTION: B VIRUS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Lappin & Kusner
; STREET: 200 State Street
; CITY: Boston
; STATE: MA
; COUNTRY: USA
; ZIP: 02109
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/467,397
; FILING DATE:
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Kerner, Ann-Louise
; REGISTRATION NUMBER: 33,523
; REFERENCE/DOCKET NUMBER: HY2-041
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 617-330-1300
; TELEFAX: 617-330-1311
; INFORMATION FOR SEQ ID NO: 56:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 34 base pairs
; TYPE: nucleic acid
; STRANDEDNESS: single
; TOPOLOGY: Linear
; MOLECULE TYPE: DNA
; HYPOTHETICAL: NO
; ANTI-SENSE: NO
; US-08-467-397-56
GTTGGATTGCTGACGTAATCTGATTGGCGGTG1
```